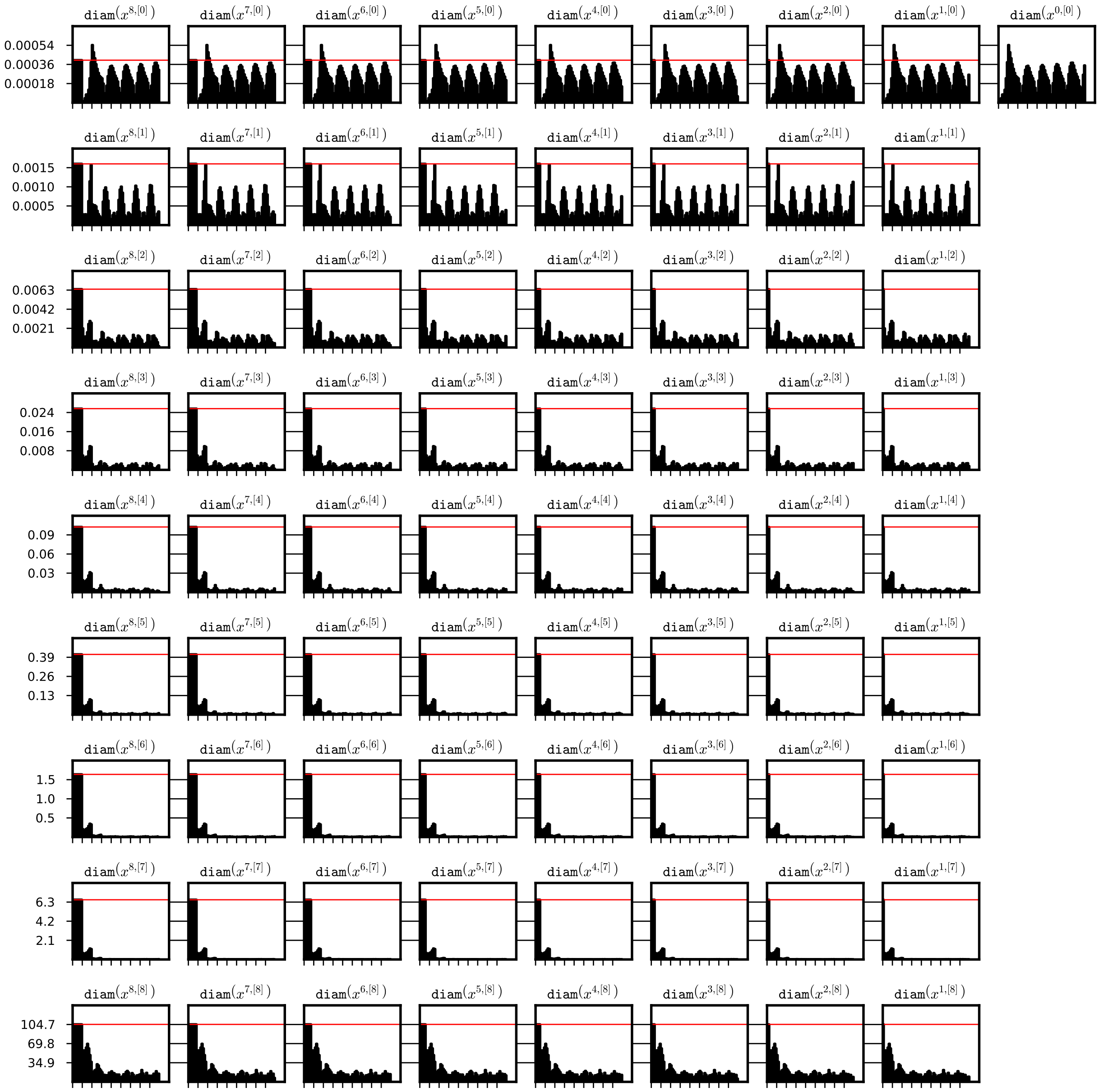

Figure 1: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{0,..,8\cdot(7+2)\}}$ (a full history) for some (8,7)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored in the file `periodic_08_07_out_3/rect_di.txt`.

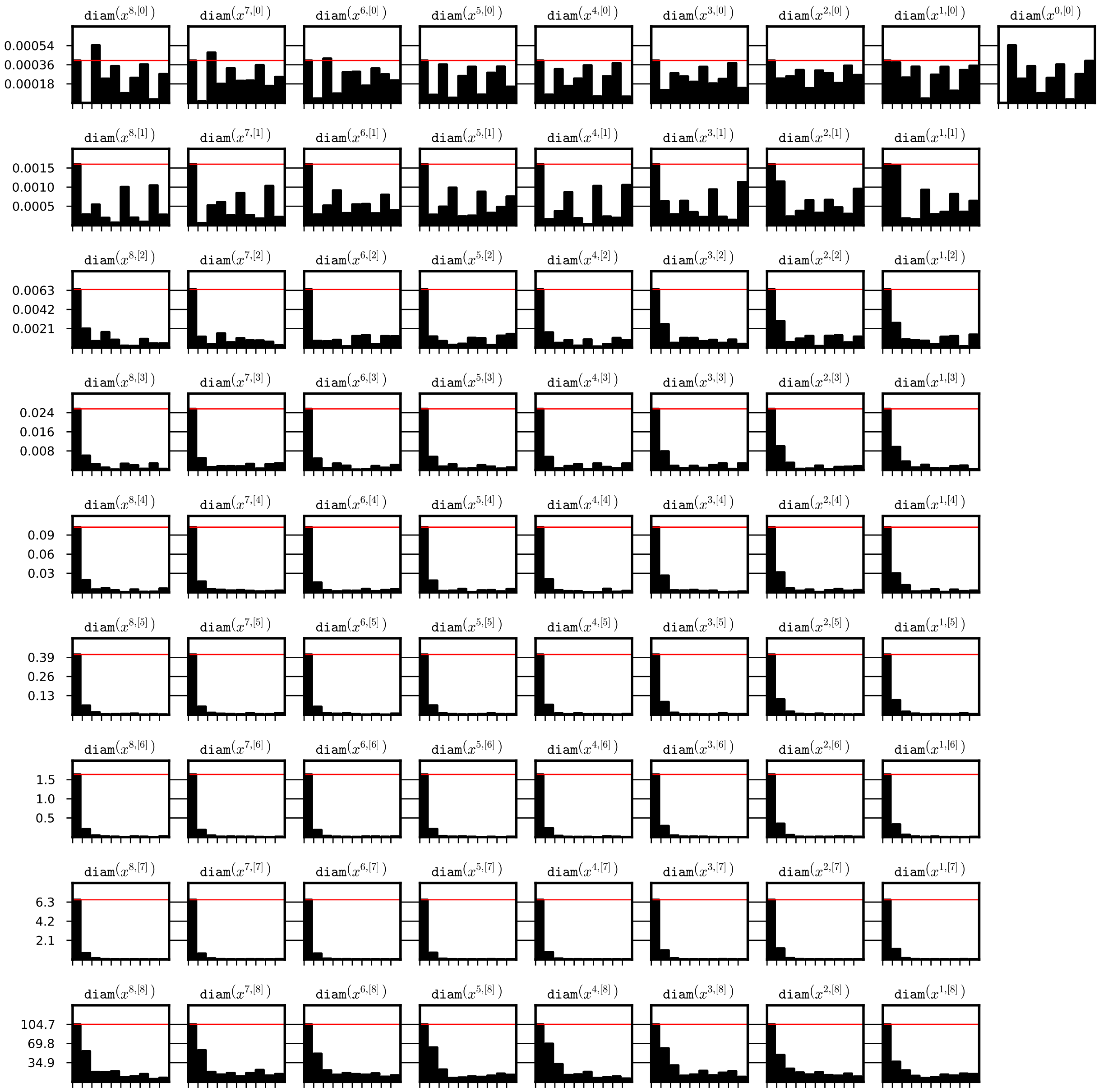

Figure 2: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{0,..,(7+2)\}}$ for some (8,7)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored in the file `periodic_08_07_out_3/rect_di.txt`.

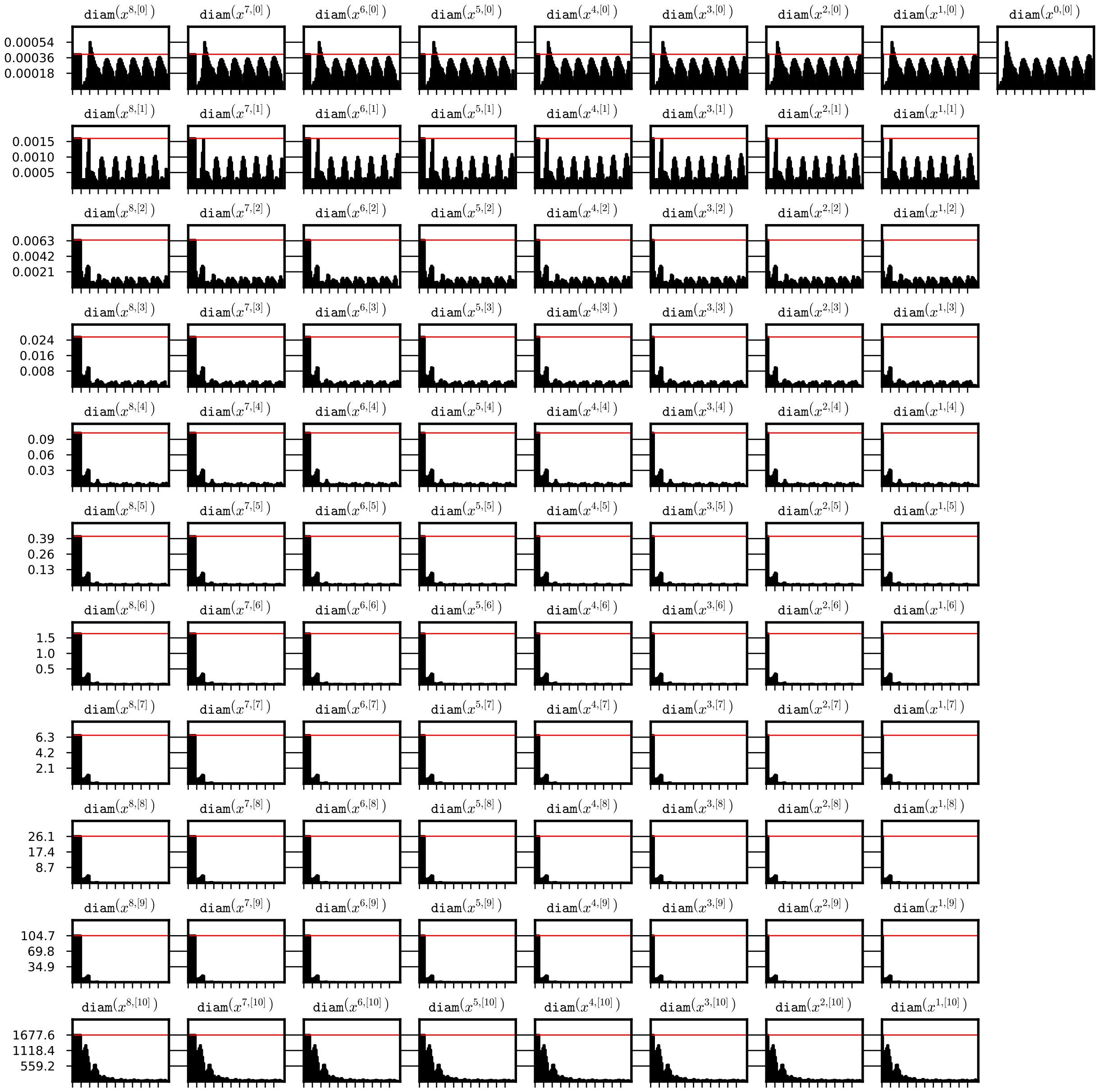

Figure 3: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{0,..,8\cdot(9+2)\}}$ (a full history) for some (8,9)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored in the file `periodic_08_09_out_3/rect_di.txt`.

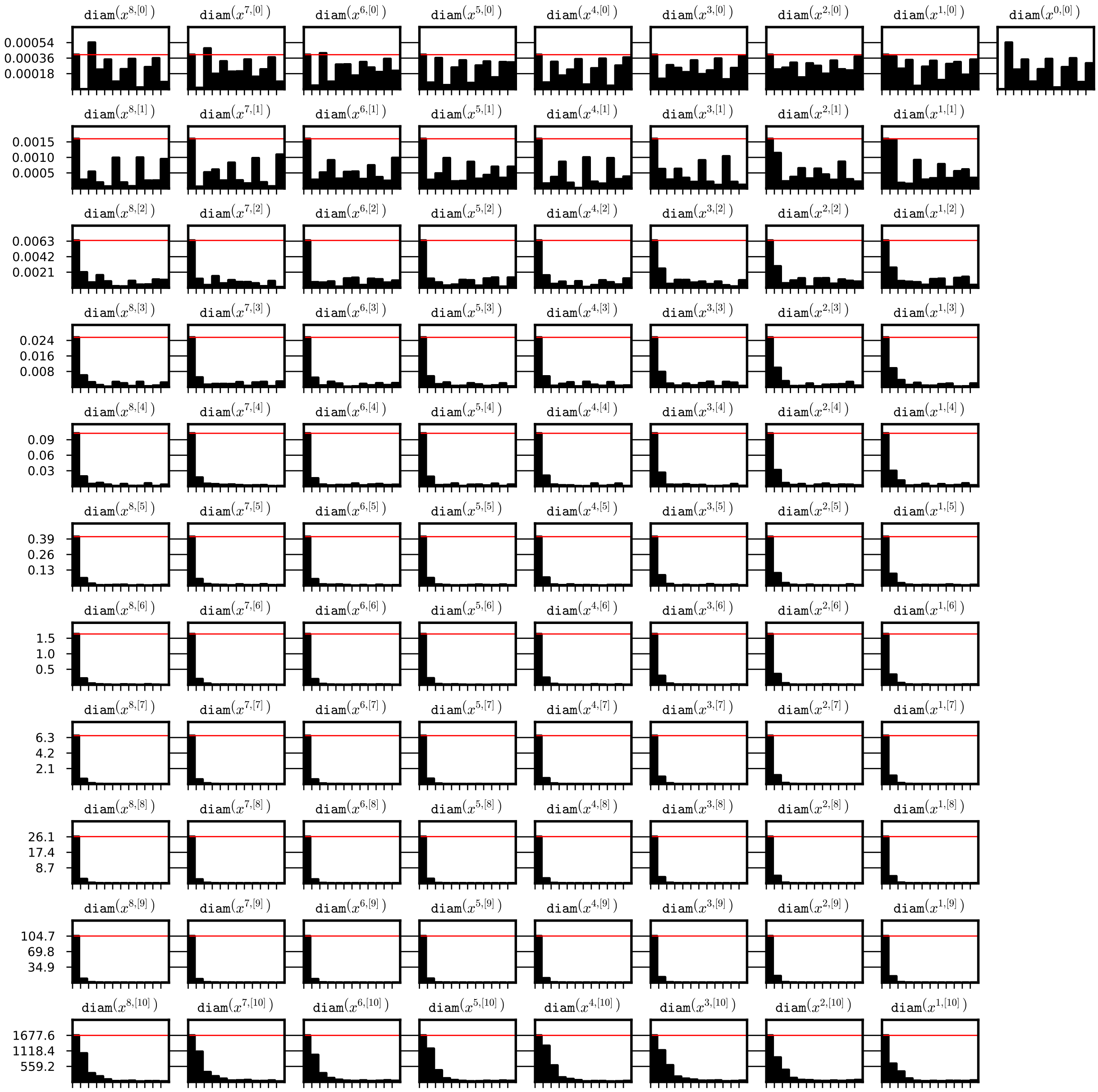

Figure 4: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{0,..,(9+2)\}}$ for some (8,9)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored in the file `periodic_08_09_out_3/rect_di.txt`.

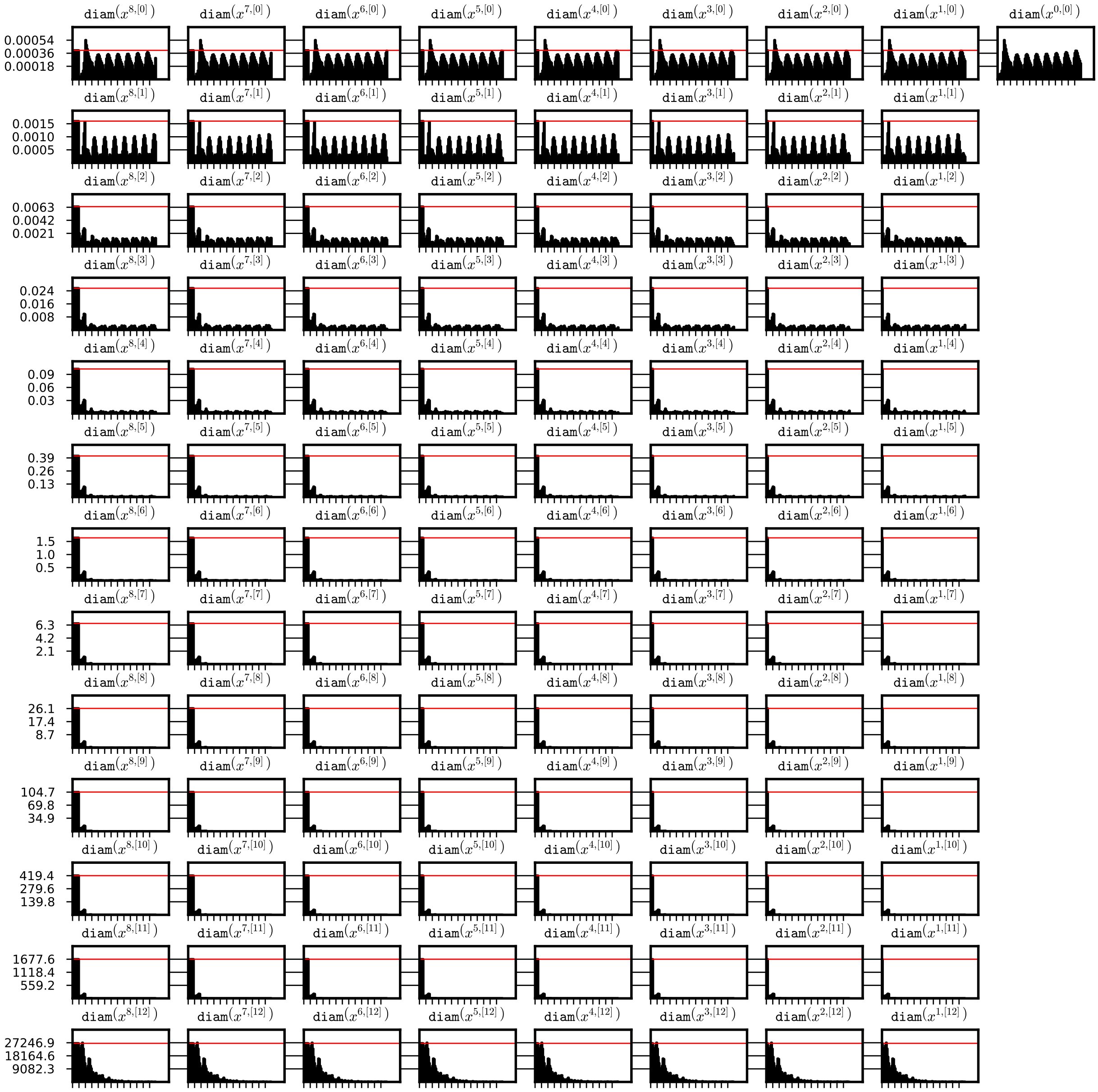

Figure 5: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{0,..,8\cdot(11+2)\}}$ (a full history) for some (8,11)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored in the file `periodic_08_11_out_3/rect_di.txt`.

Figure 6: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{0,..,(11+2)\}}$ for some (8,11)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored in the file `periodic_08_11_out_3/rect_di.txt`.

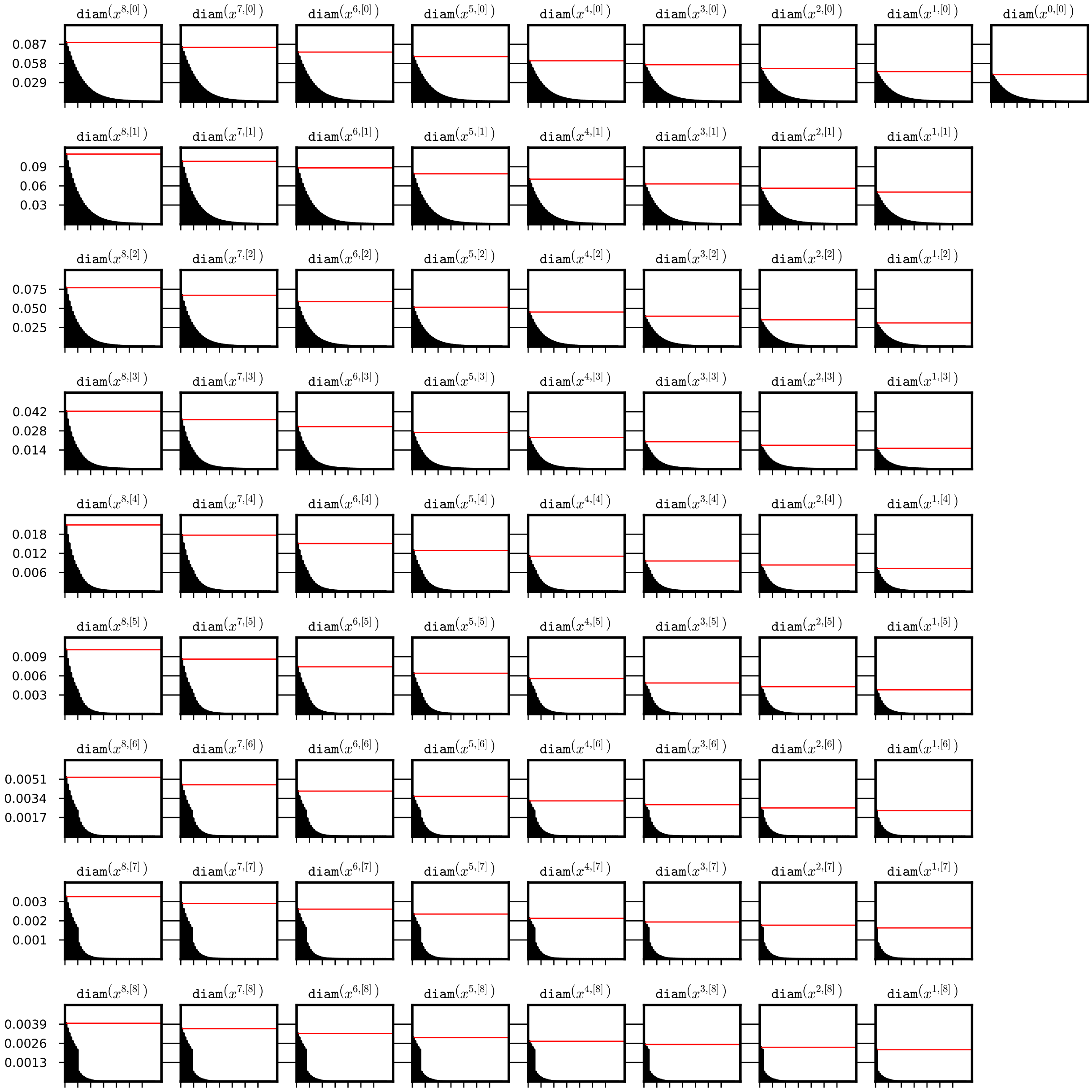

Figure 7: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{16,..,8\cdot(7+2)\}}$ (a full history after $2\cdot p$ steps) for some (8,7)-representation $\bar{x}_0$ of a stable stationary solution $x\equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored in the file `steady_08_07_out_3/rect_di.txt`.

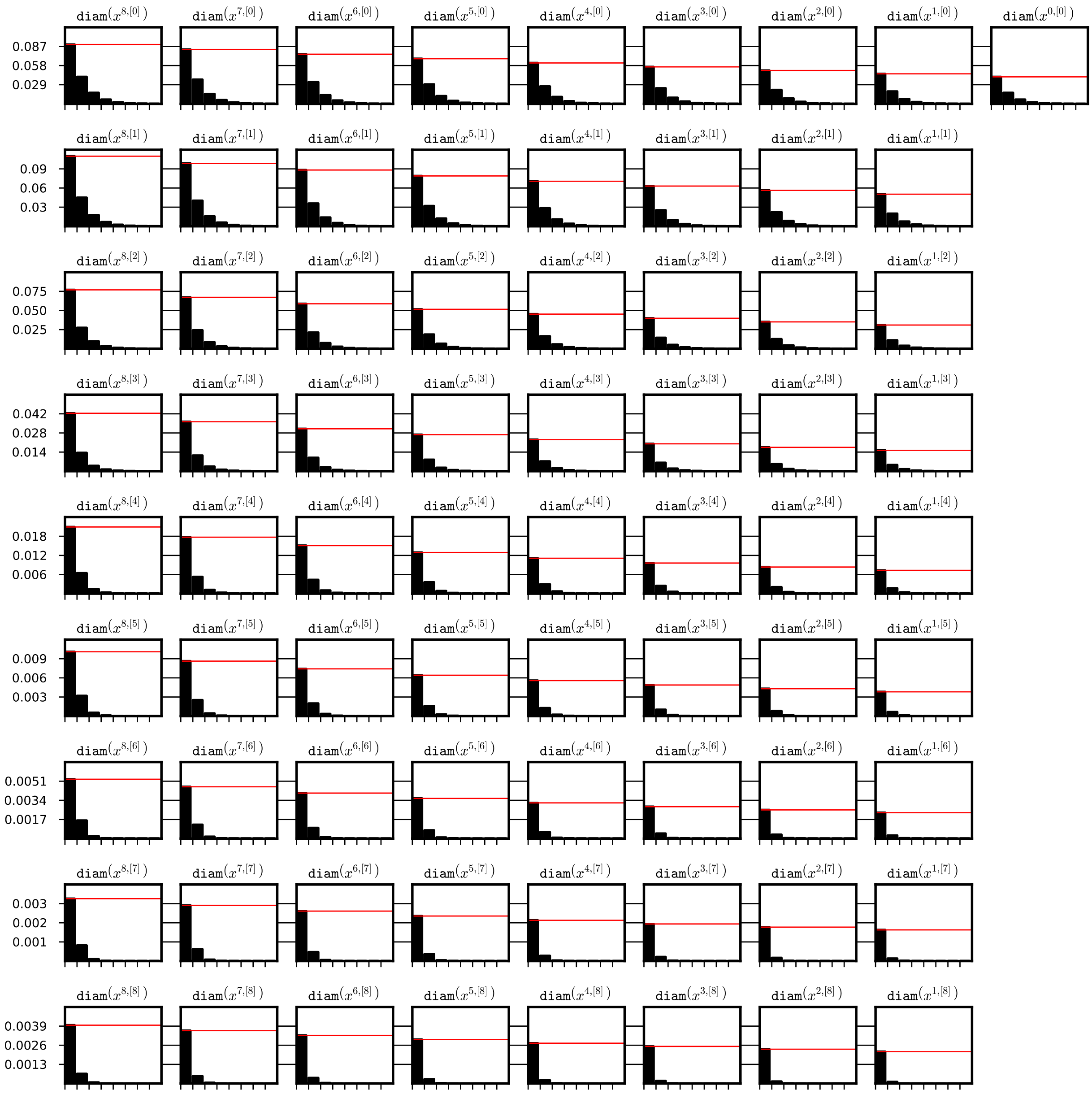

Figure 8: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{2,..,(7+2)\}}$ for some (8,7)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function after $2 \cdot p$ steps. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored in the file `steady_08_07_out_3/rect_di.txt`.

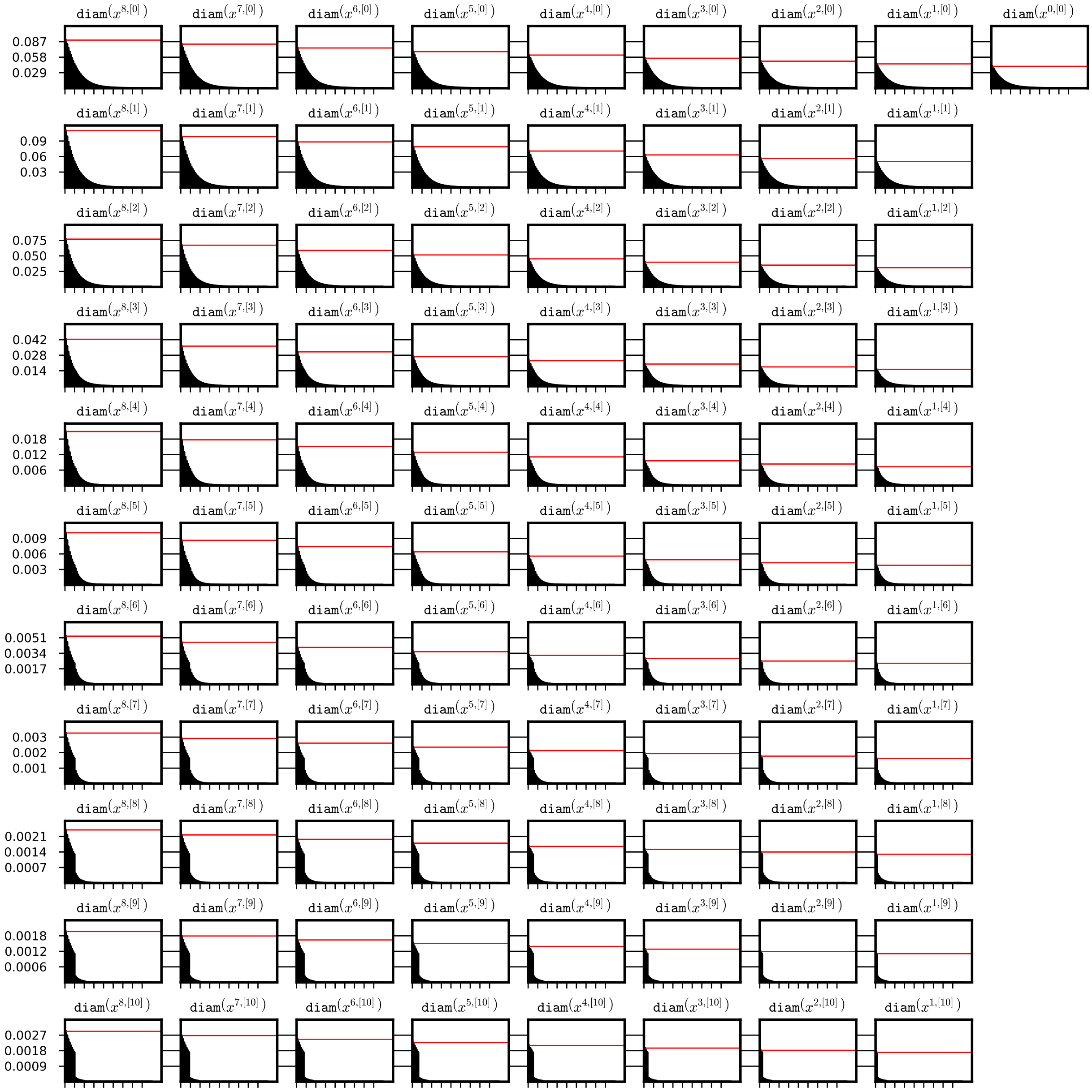

Figure 9: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{16,..,8\cdot(9+2)\}}$ (a full history after $2 \cdot p$ steps) for some (8,9)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored in the file `steady_08_09_out_3/rect_di.txt`.

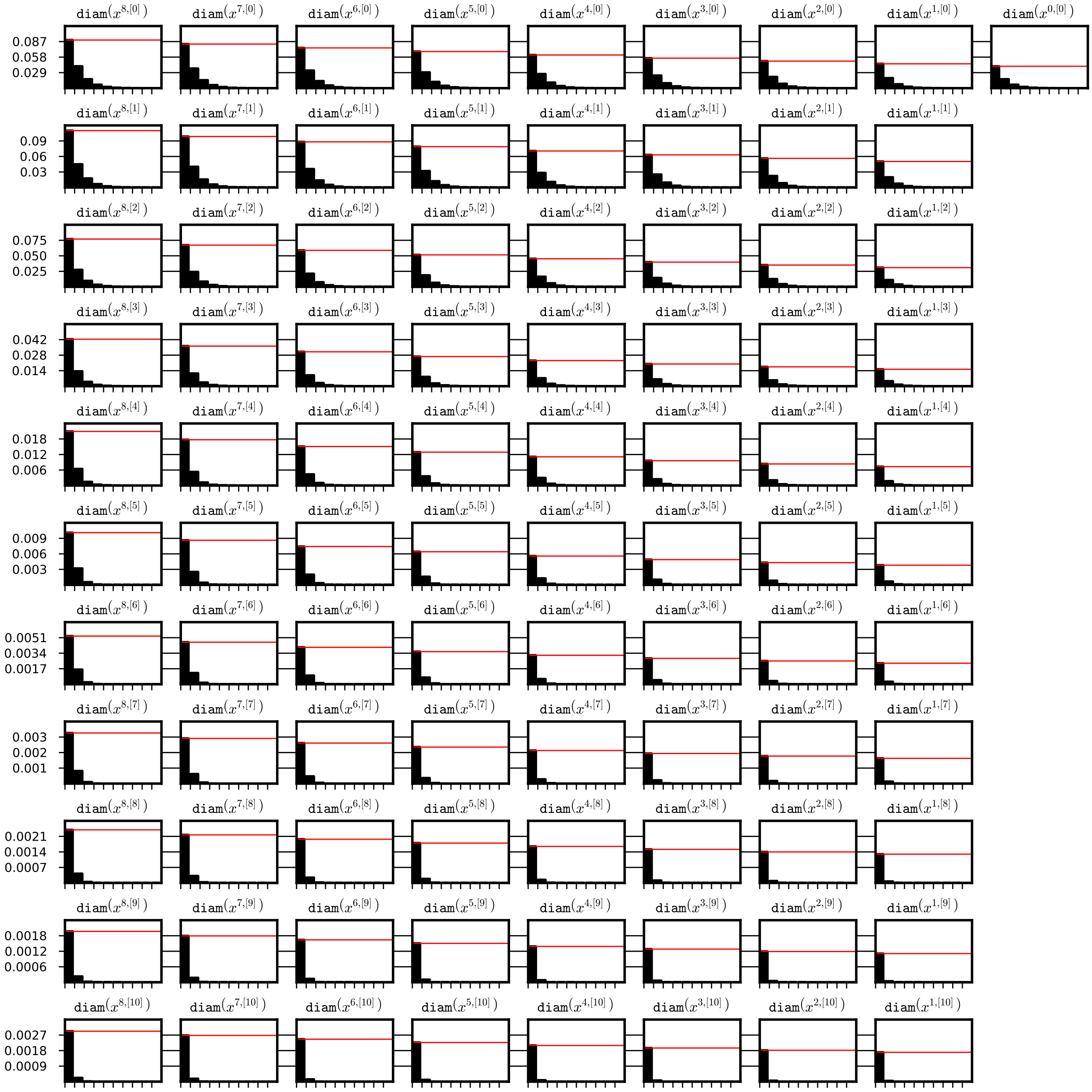

Figure 10: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{2,..,(9+2)\}}$ for some (8,9)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function after $2 \cdot p$ steps. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored in the file `steady_08_09_out_3/rect_di.txt`.

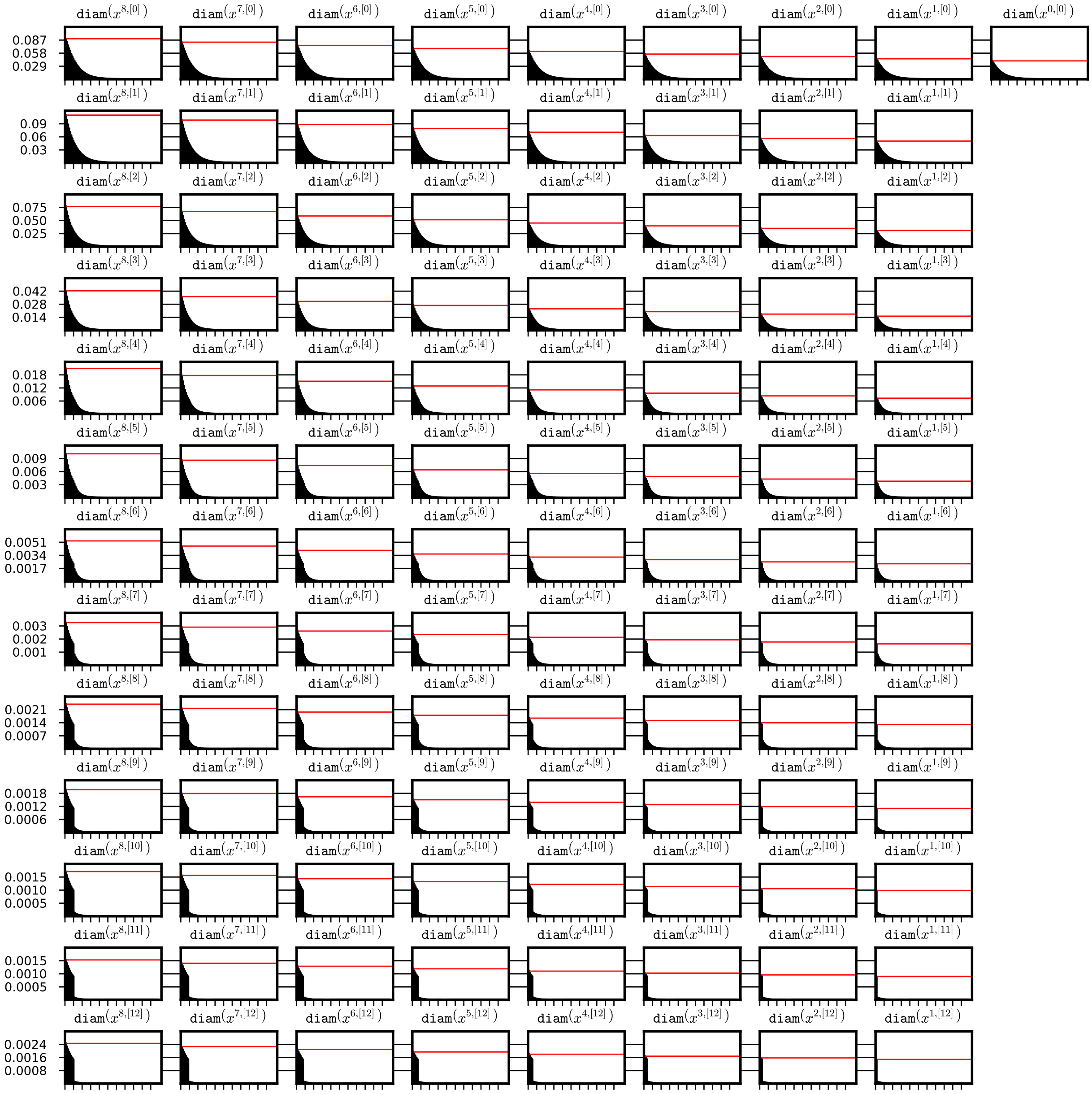

Figure 11: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{16,..,8\cdot(11+2)\}}$ (a full history after $2 \cdot p$ steps) for some (8,11)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored in the file `steady_08_11_out_3/rect_di.txt`.

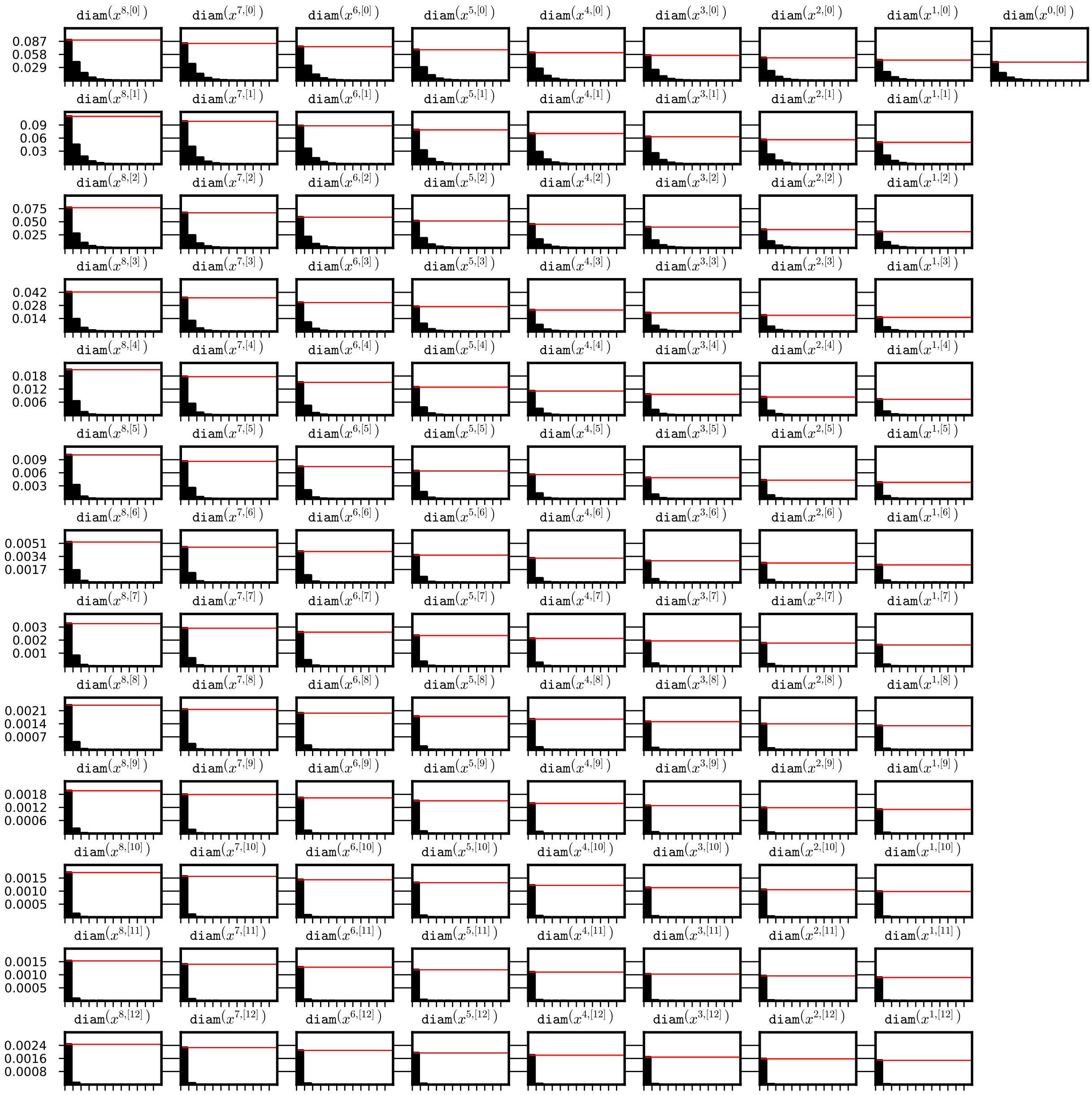

Figure 12: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{2,..,(11+2)\}}$ for some (8,11)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (??). Red horizontal line marks the diameter of the representation of the initial function after $2\cdot p$ steps. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (??), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored in the file `steady_08_11_out_3/rect_di.txt`.

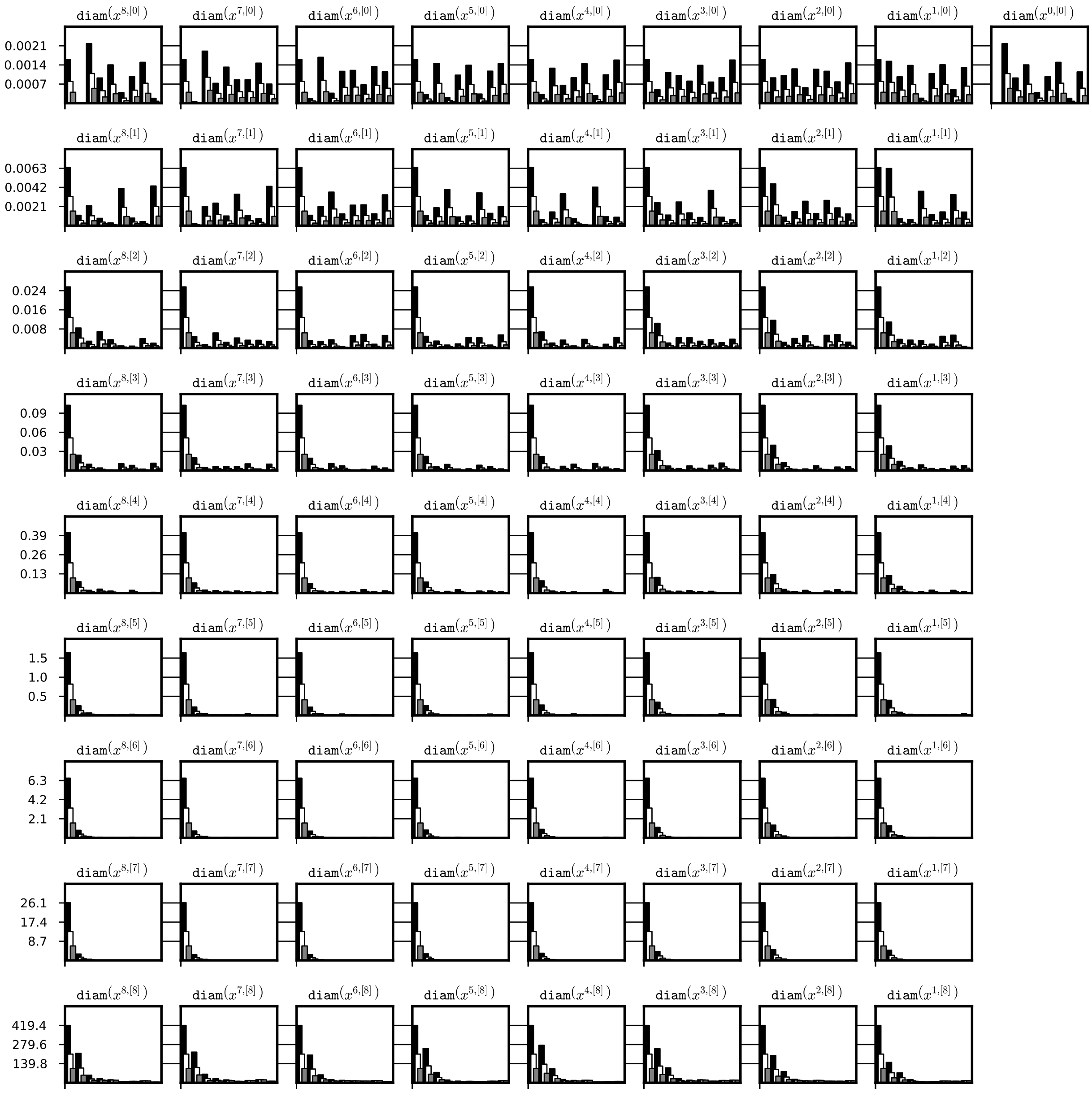

Figure 13: Dependence of the diameter of the interval set on the initial data diameter. A history of the integration of some neighbourhood of a stable periodic orbit for system (**??**) was recorded for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 1a, 1b, 1c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored the files `periodic_08_07_out_1/rect_di.txt`, `periodic_08_07_out_2/rect_di.txt` and `periodic_08_07_out_3/rect_di.txt` respectively.

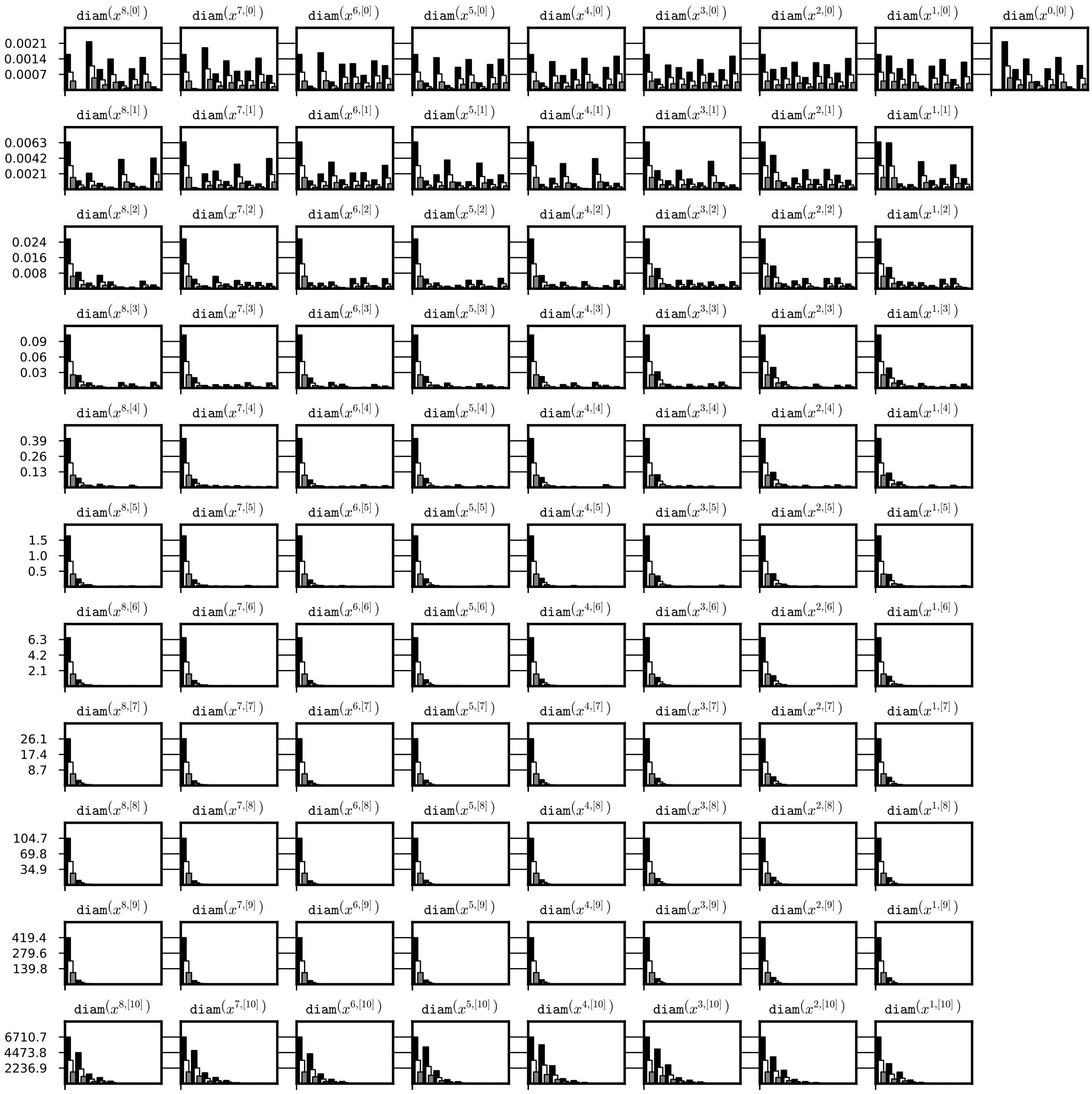

Figure 14: Dependence of the diameter of the interval set on the initial data diameter. A history of the integration of some neighbourhood of a stable periodic orbit for system (**??**) was recorded for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 2a, 2b, 2c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored the files `periodic_08_09_out_1/rect_di.txt`, `periodic_08_09_out_2/rect_di.txt` and `periodic_08_09_out_3/rect_di.txt` respectively.

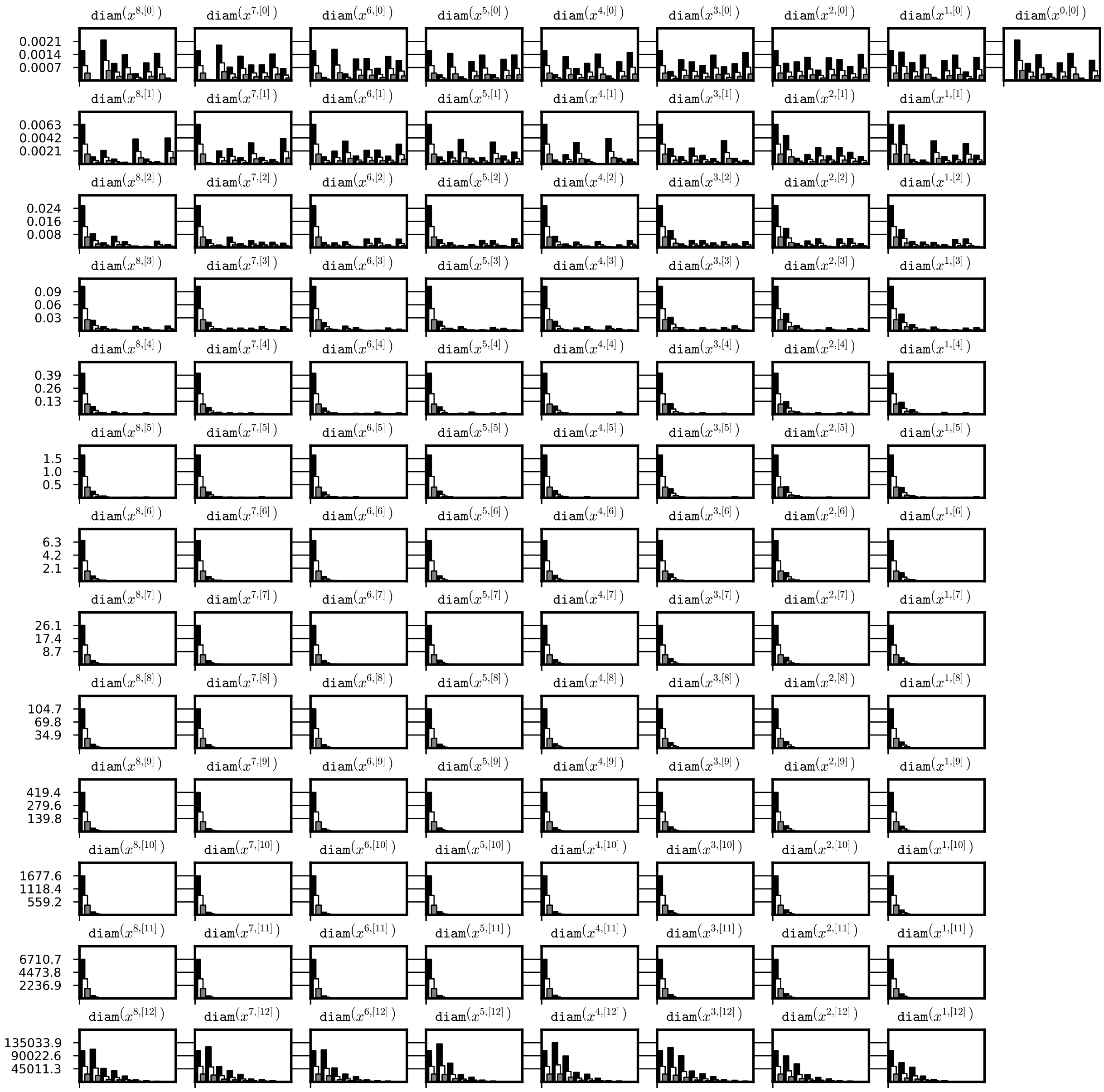

Figure 15: Dependence of the diameter of the interval set on the initial data diameter. A history of the integration of some neighbourhood of a stable periodic orbit for system (??) was recorded for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 3a, 3b, 3c (black, white, gray respectively). System (??), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored the files `periodic_08_11_out_1/rect_di.txt`, `periodic_08_11_out_2/rect_di.txt` and `periodic_08_11_out_3/rect_di.txt` respectively.

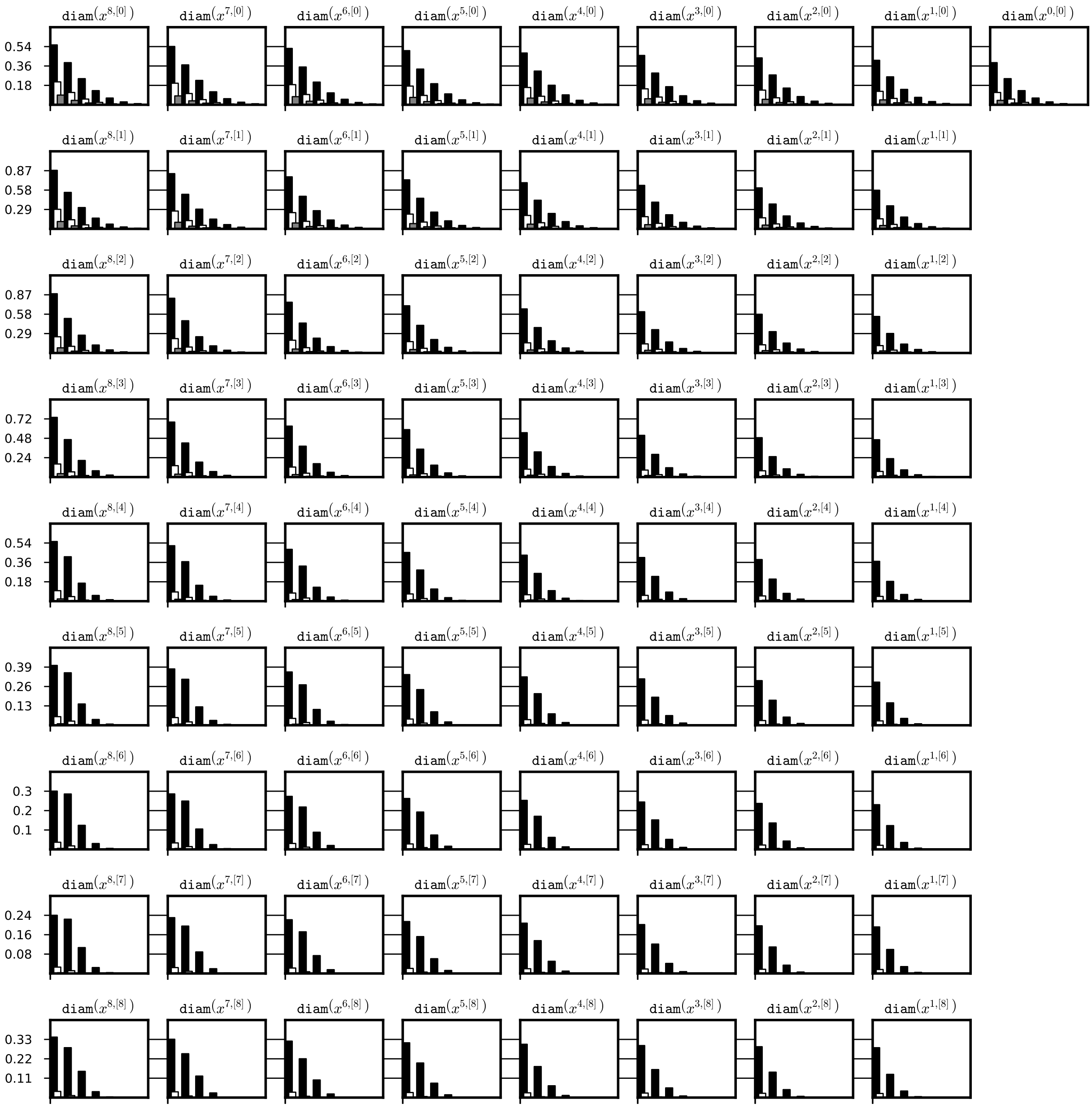

Figure 16: Dependence of the diameter of the interval set on the initial data diameter. After initial $2 \cdot p$ steps a history of the integration of some neighbourhood of a stable stationary solution $x \equiv 0$ to system (**??**) was recorded every p steps for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 1a, 1b, 1c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored the files `steady_08_07_out_1/rect_di.txt`, `steady_08_07_out_2/rect_di.txt` and `steady_08_07_out_3/rect_di.txt` respectively.

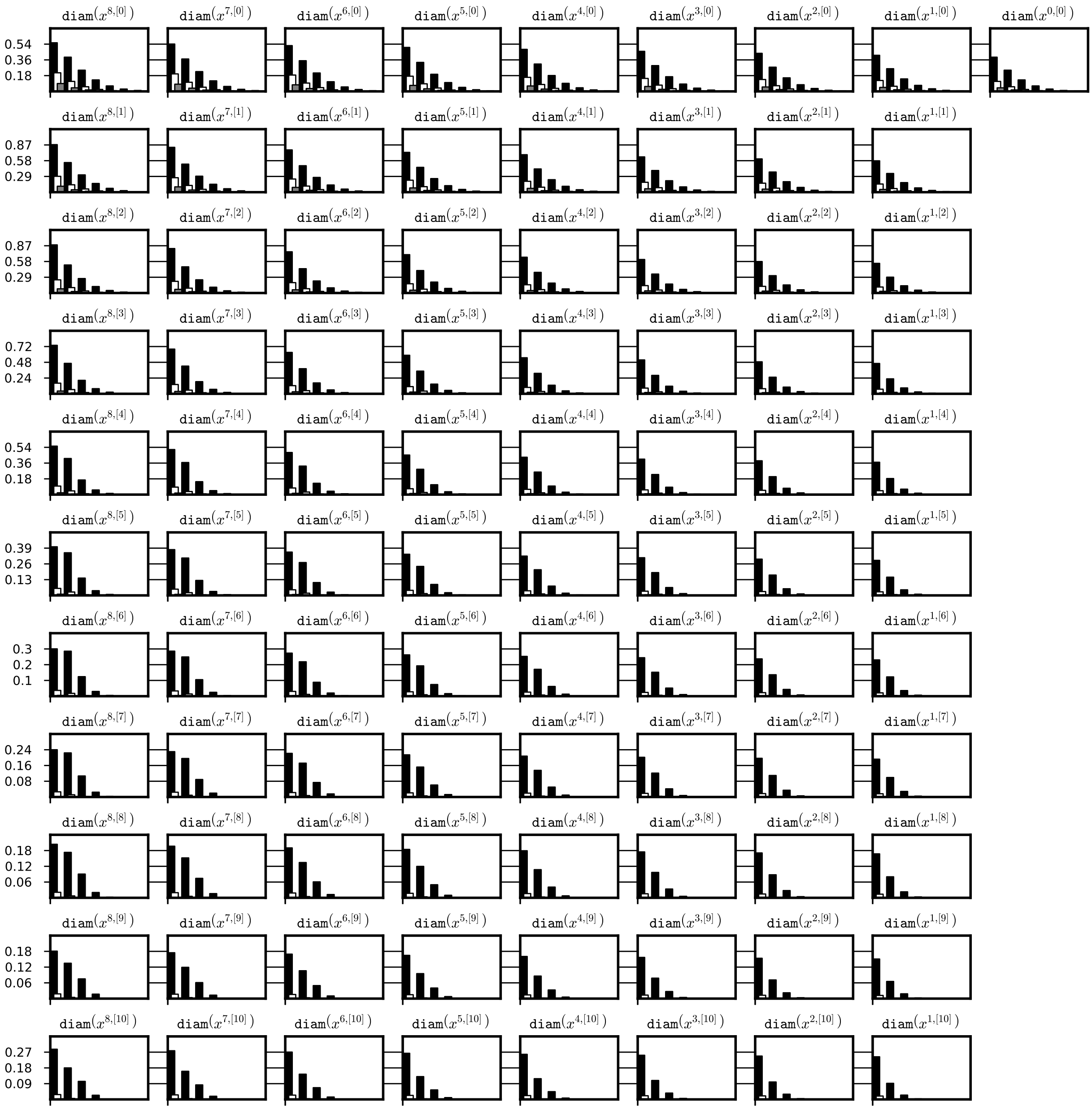

Figure 17: Dependence of the diameter of the interval set on the initial data diameter. After initial $2 \cdot p$ steps a history of the integration of some neighbourhood of a stable stationary solution $x \equiv 0$ to system (??) was recorded every p steps for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 2a, 2b, 2c (black, white, gray respectively). System (??), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored the files `steady_08_09_out_1/rect_di.txt`, `steady_08_09_out_2/rect_di.txt` and `steady_08_09_out_3/rect_di.txt` respectively.

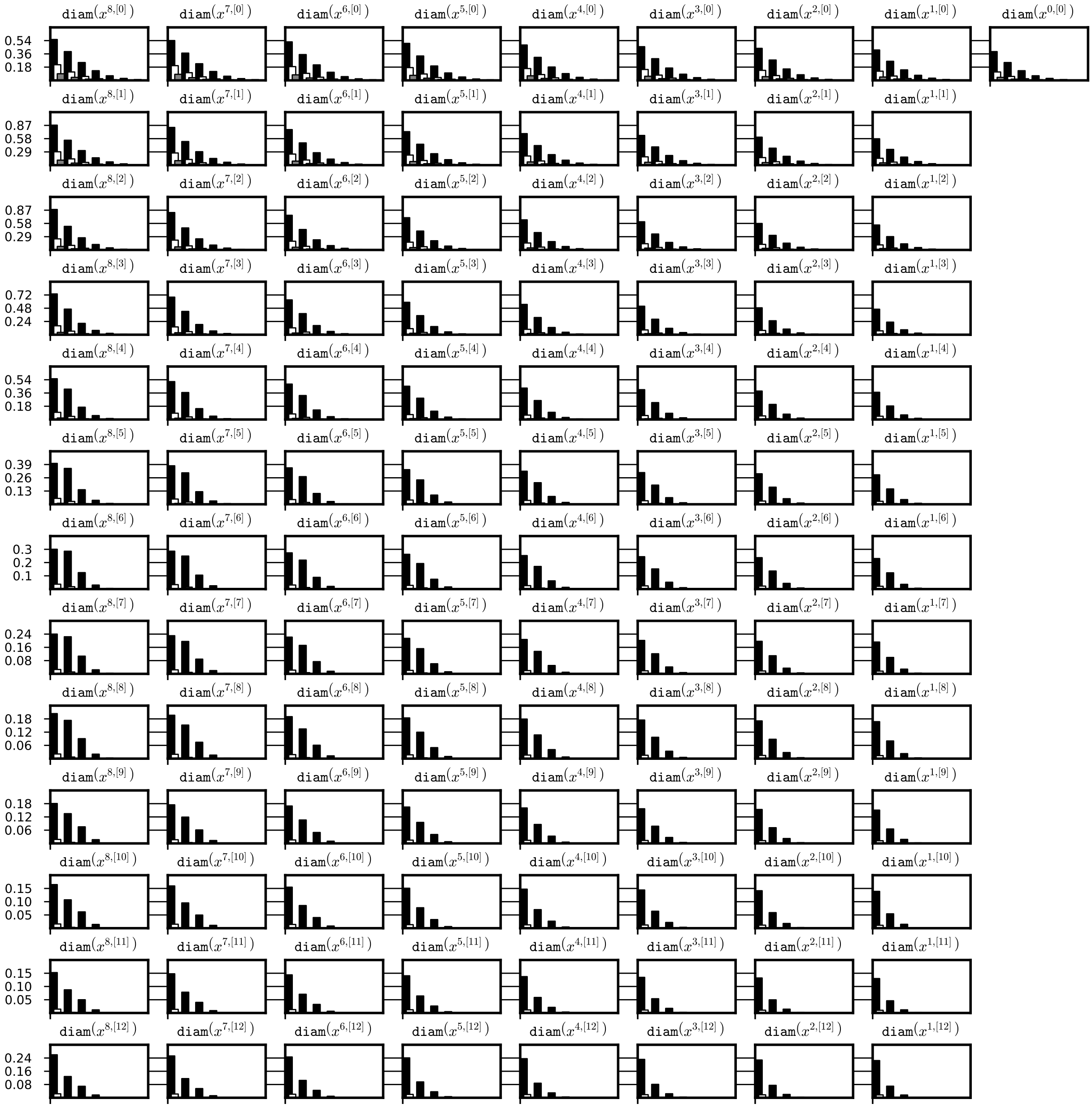

Figure 18: Dependence of the diameter of the interval set on the initial data diameter. After initial $2 \cdot p$ steps a history of the integration of some neighbourhood of a stable stationary solution $x \equiv 0$ to system (**??**) was recorded every p steps for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 3a, 3b, 3c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored the files `steady_08_11_out_1/rect_di.txt`, `steady_08_11_out_2/rect_di.txt` and `steady_08_11_out_3/rect_di.txt` respectively.

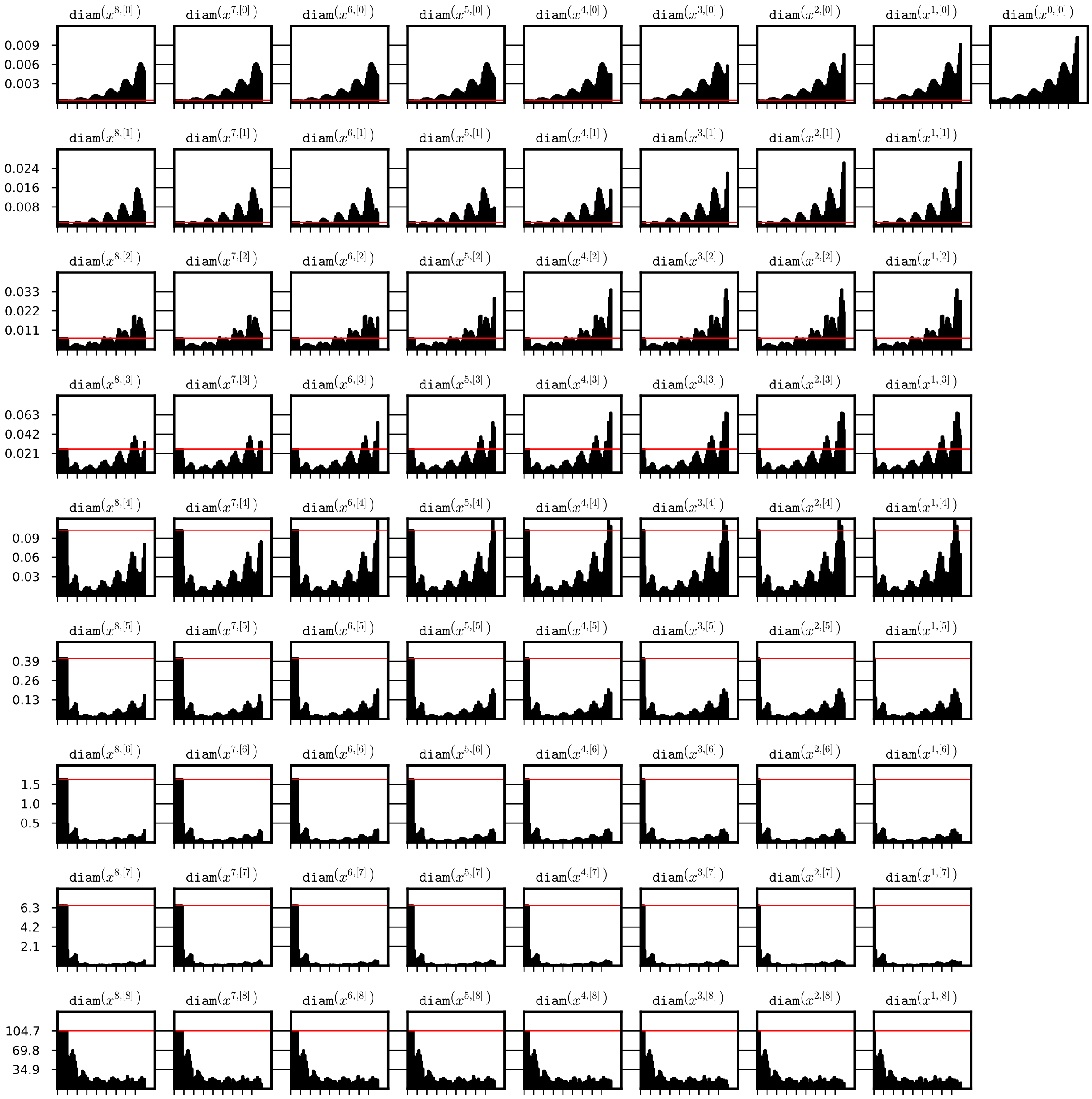

Figure 19: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{0,..,8\cdot(7+2)\}}$ (a full history) for some (8,7)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), interval set representation and (8,7)-representation were used for the integration process. The data is stored in the file `periodic_08_07_out_3/int_di.txt`.

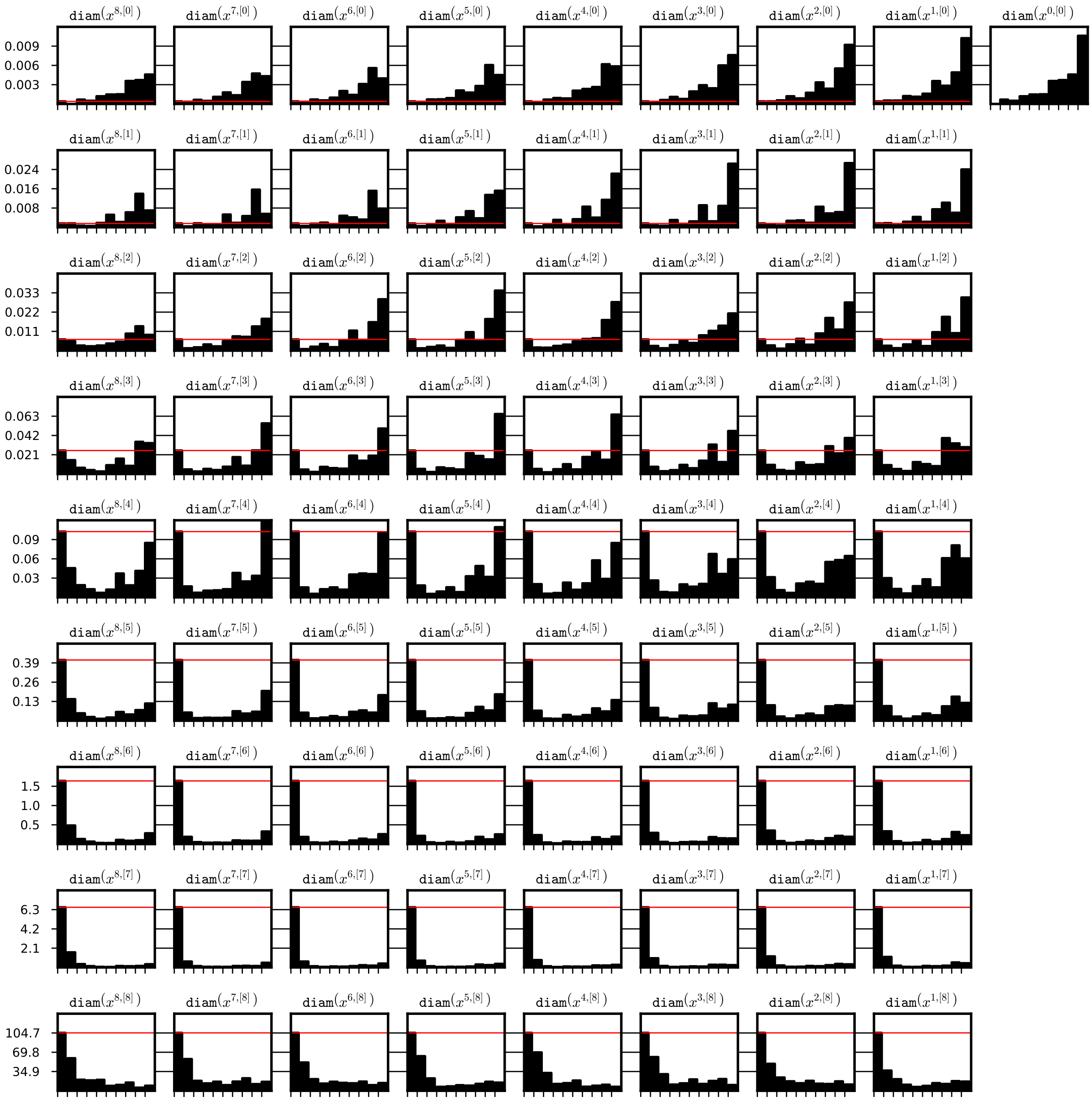

Figure 20: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{0,..,(7+2)\}}$ for some (8,7)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), interval set representation and (8,7)-representation were used for the integration process. The data is stored in the file `periodic_08_07_out_3/int_di.txt`.

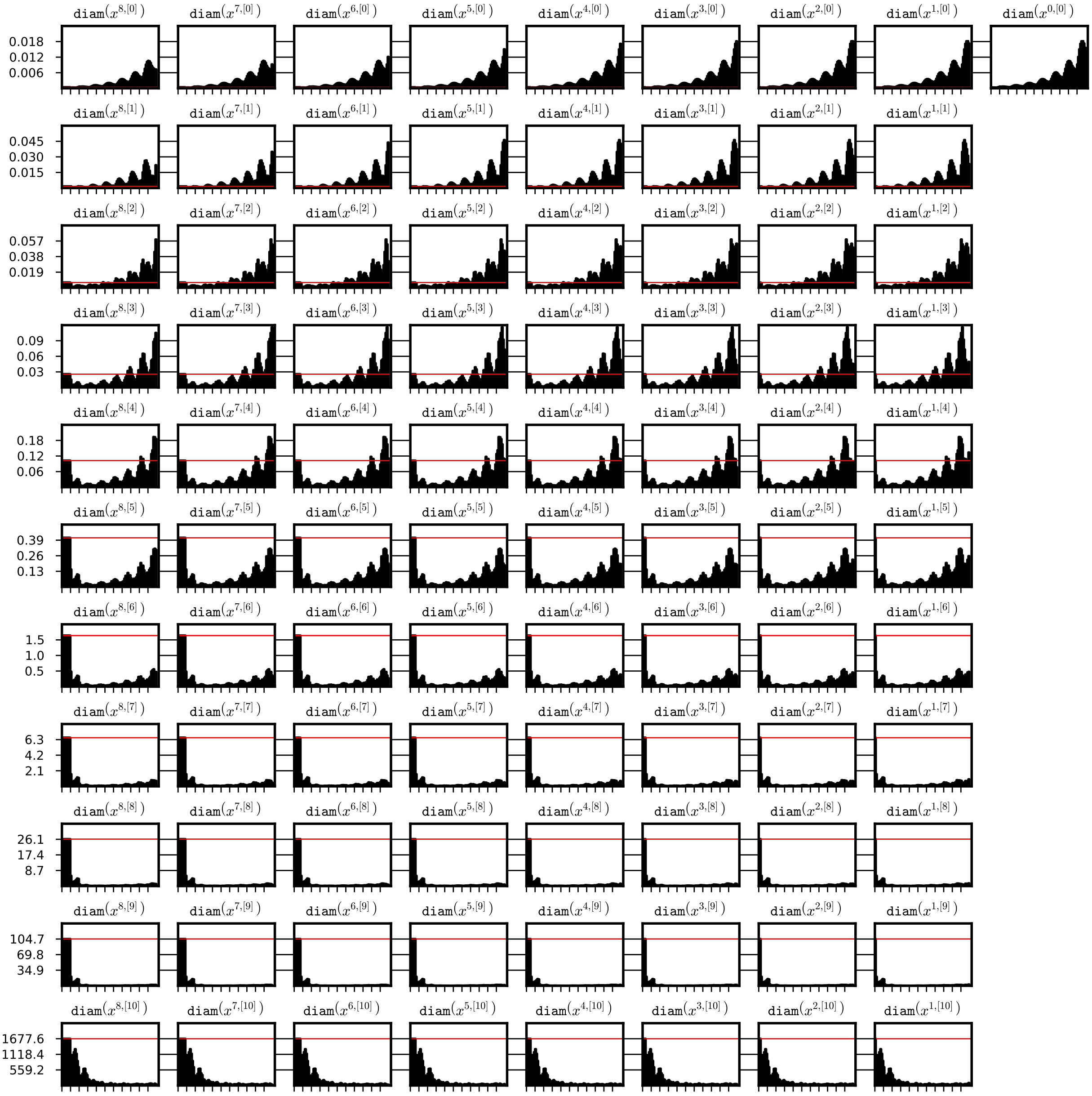

Figure 21: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{0,..,8\cdot(9+2)\}}$ (a full history) for some (8,9)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), interval set representation and (8,9)-representation were used for the integration process. The data is stored in the file `periodic_08_09_out_3/int_di.txt`.

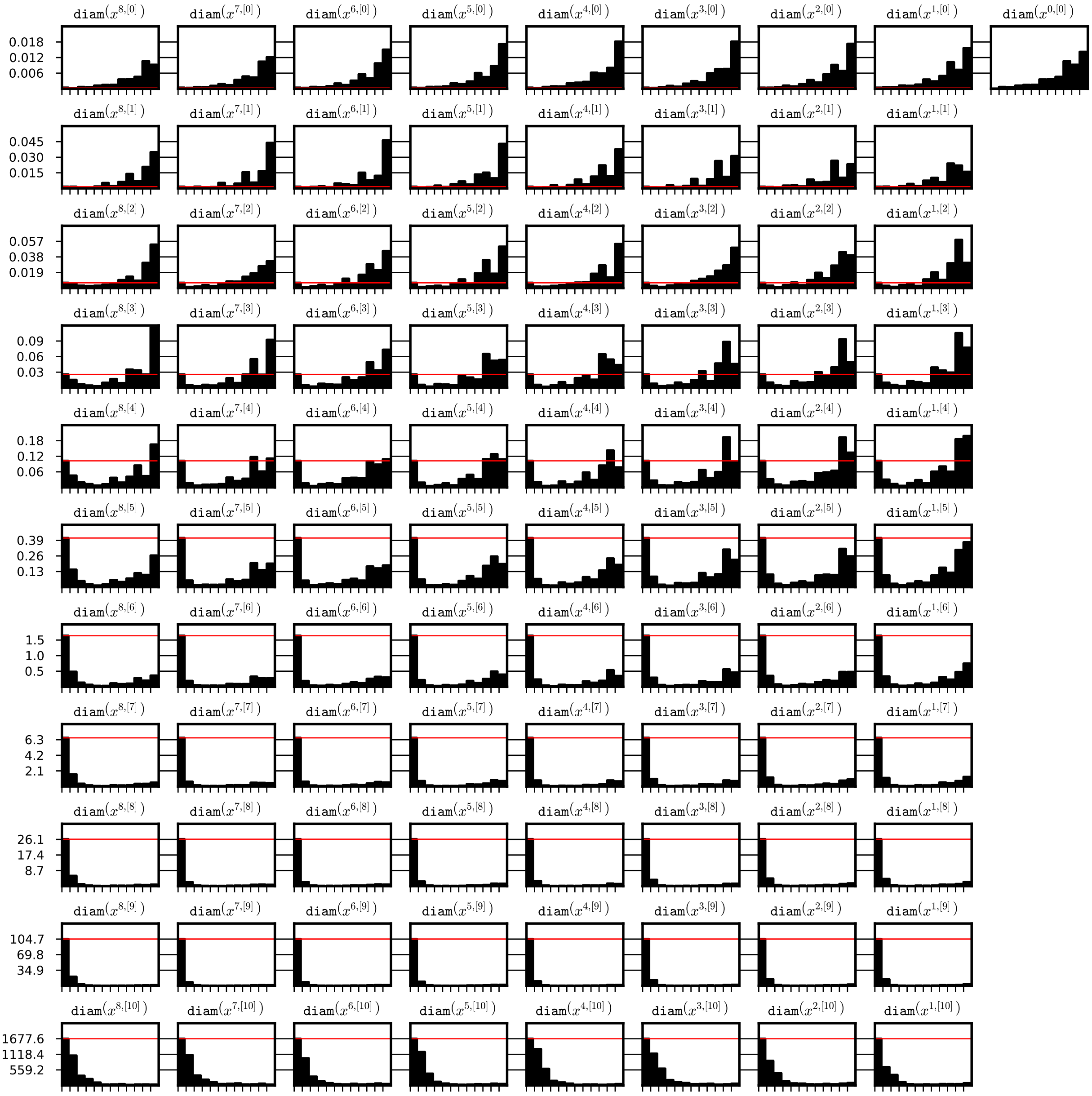

Figure 22: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{0,..,(9+2)\}}$ for some (8,9)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), interval set representation and (8,9)-representation were used for the integration process. The data is stored in the file `periodic_08_09_out_3/int_di.txt`.

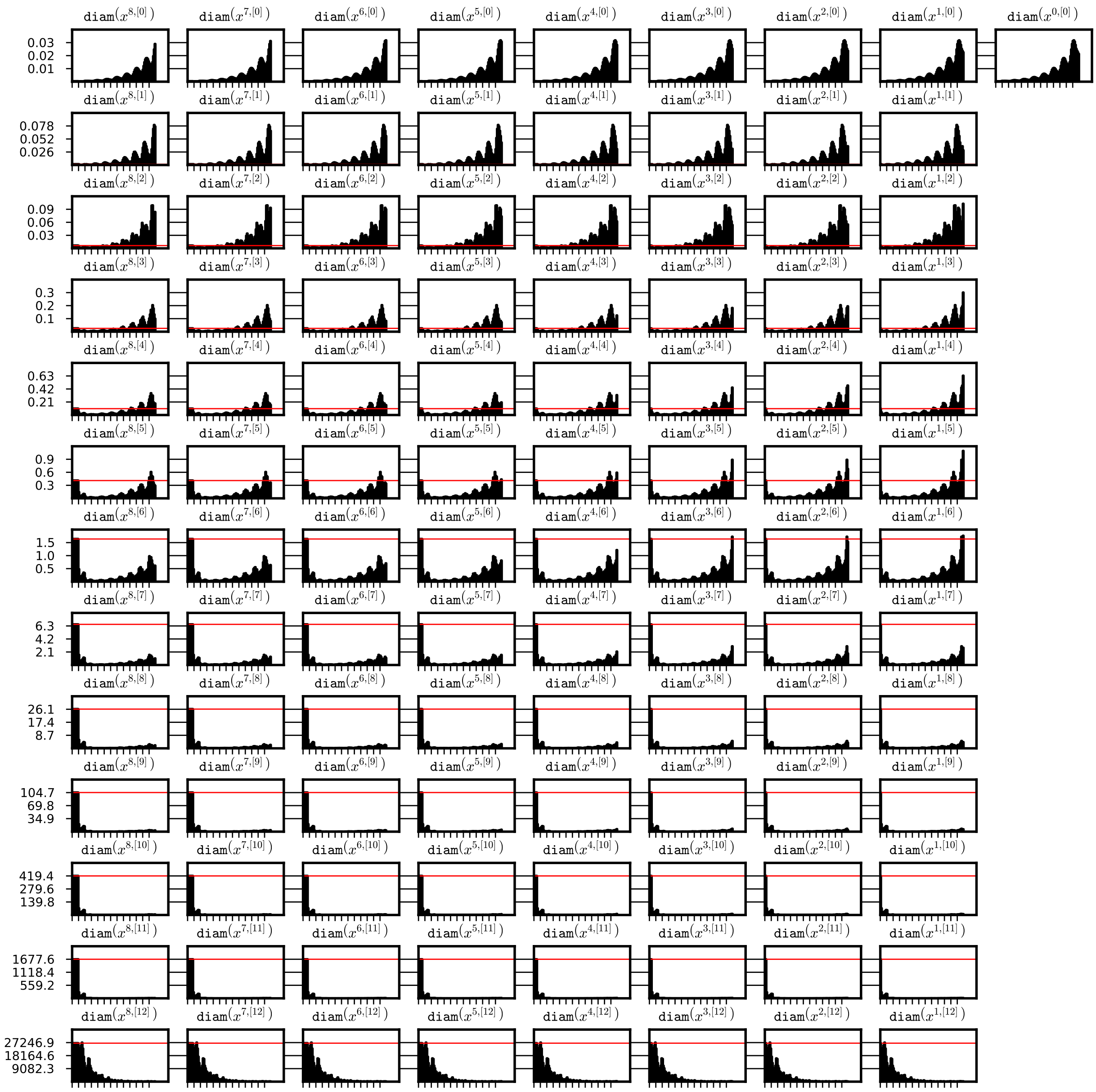

Figure 23: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{0,..,8\cdot(11+2)\}}$ (a full history) for some (8,11)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), interval set representation and (8,11)-representation were used for the integration process. The data is stored in the file `periodic_08_11_out_3/int_di.txt`.

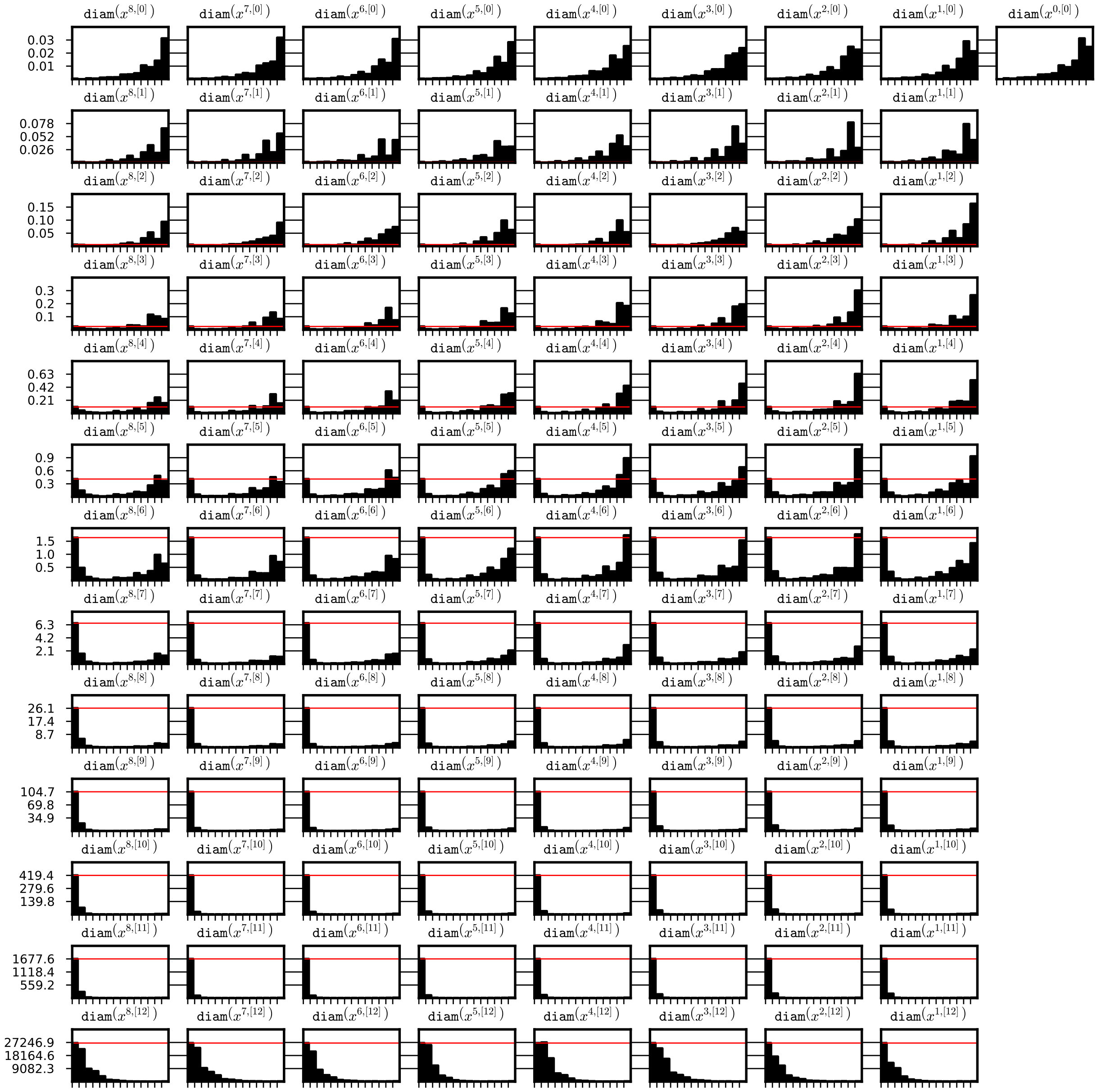

Figure 24: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{0,..,(11+2)\}}$ for some (8,11)-representation $\bar{x}_0$ of a stable periodic orbit for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), interval set representation and (8,11)-representation were used for the integration process. The data is stored in the file `periodic_08_11_out_3/int_di.txt`.

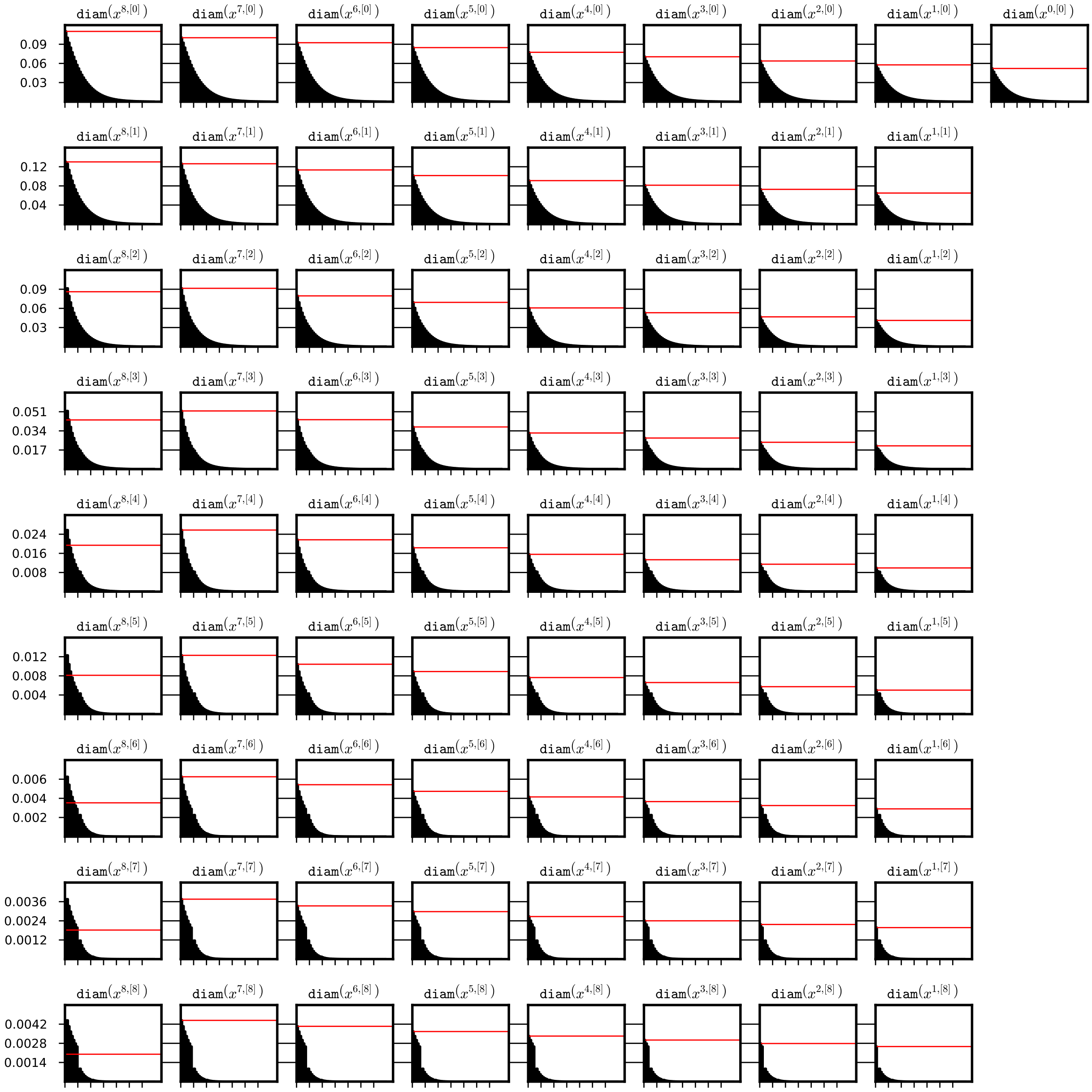

Figure 25: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{16,..,8\cdot(7+2)\}}$ (a full history after $2\cdot p$ steps) for some (8,7)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), interval set representation and (8,7)-representation were used for the integration process. The data is stored in the file `steady_08_07_out_3/int_di.txt`.

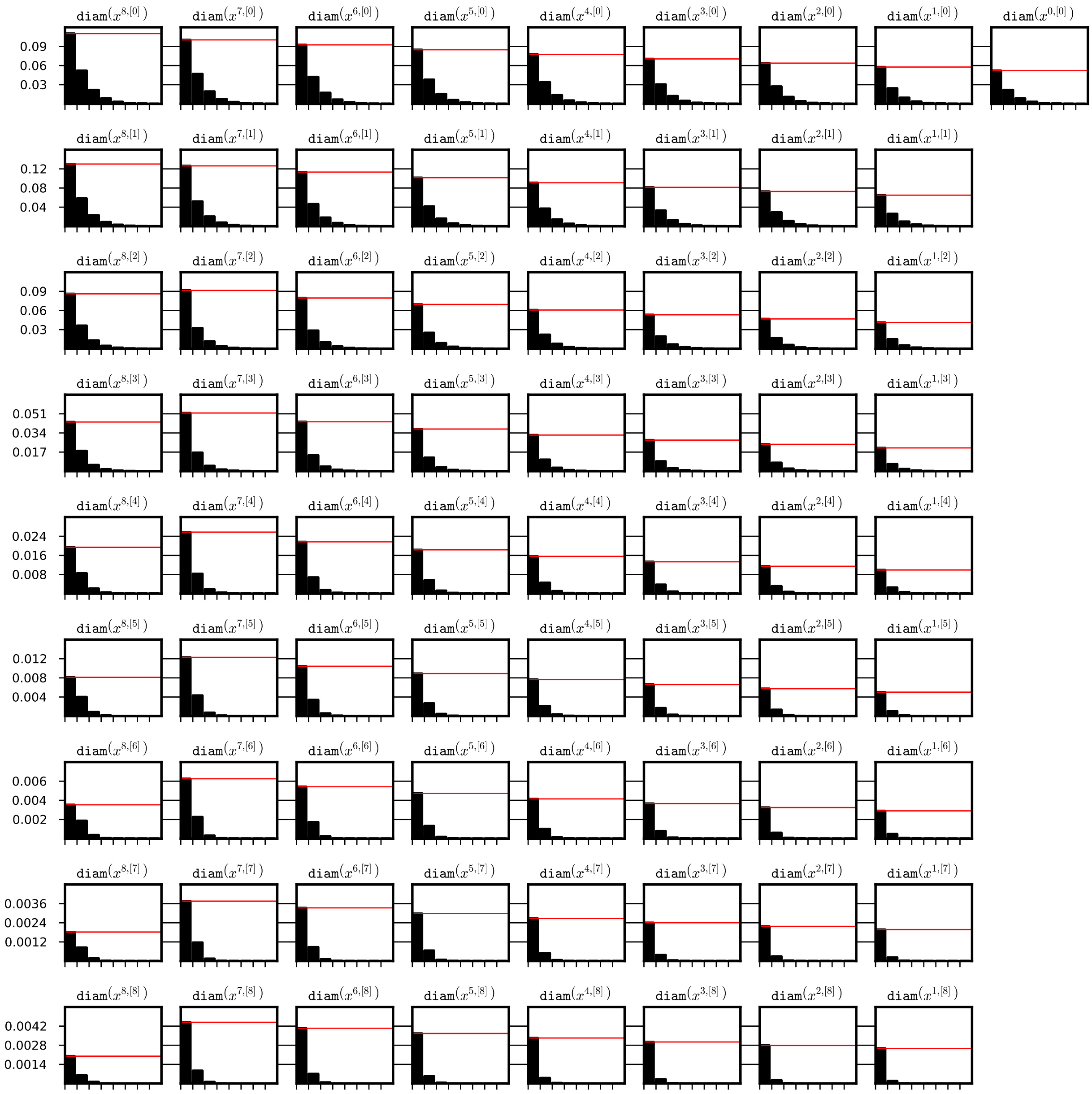

Figure 26: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{2,..,(7+2)\}}$ for some (8,7)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function after $2 \cdot p$ steps. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 1c was used. System (**??**), interval set representation and (8,7)-representation were used for the integration process. The data is stored in the file `steady_08_07_out_3/int_di.txt`.

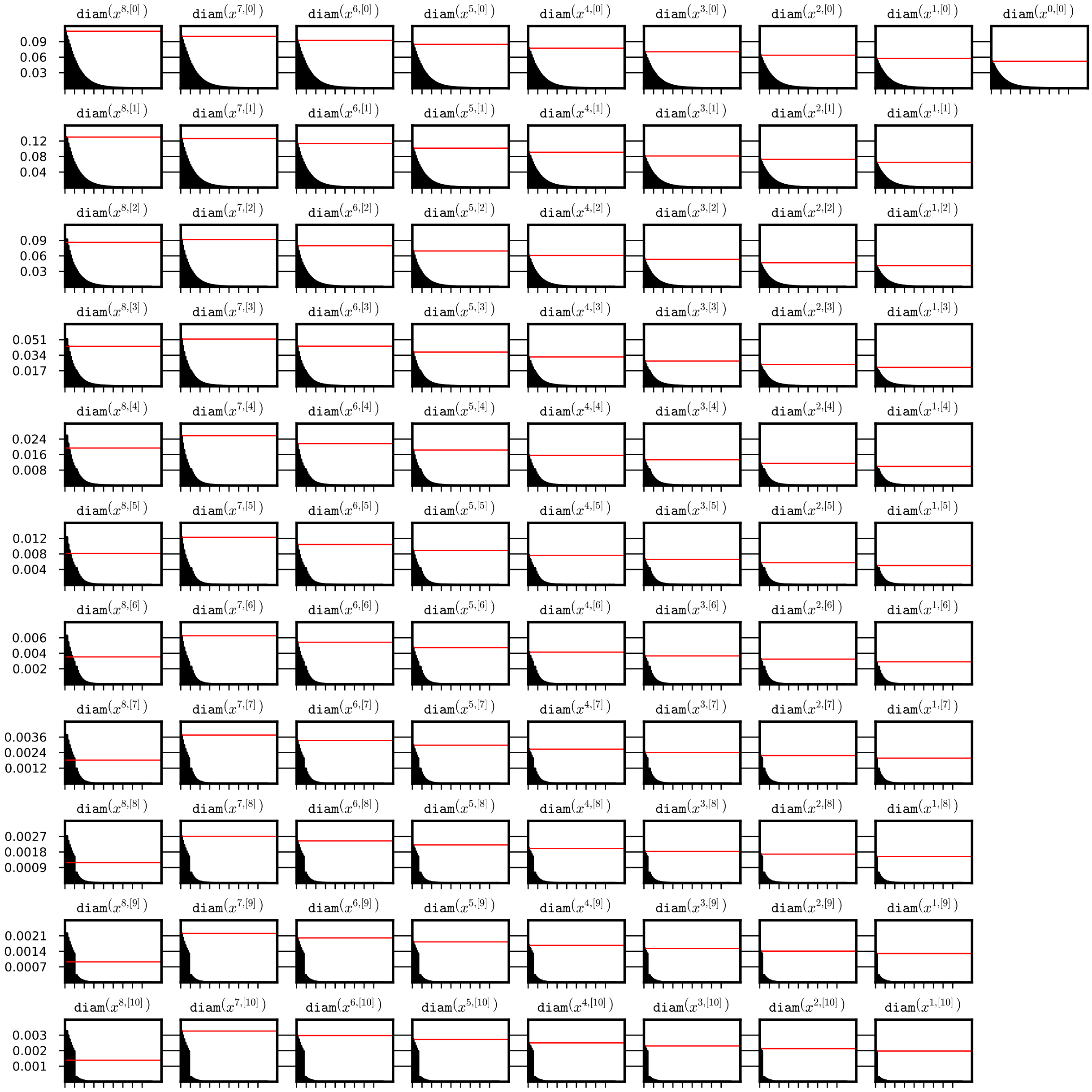

Figure 27: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{16,..,8\cdot(9+2)\}}$ (a full history after $2\cdot p$ steps) for some (8,9)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), interval set representation and (8,9)-representation were used for the integration process. The data is stored in the file `steady_08_09_out_3/int_di.txt`.

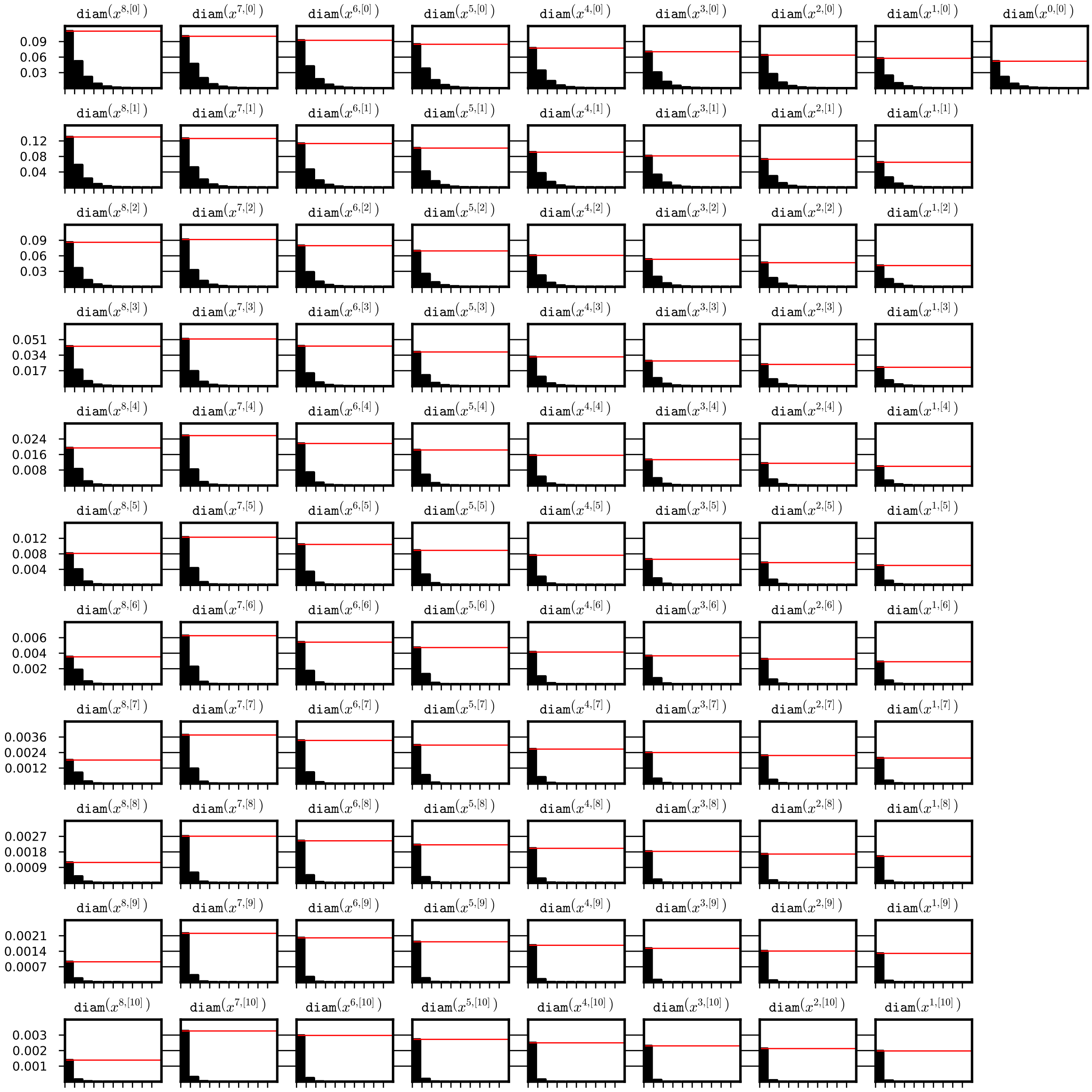

Figure 28: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{2,..,(9+2)\}}$ for some (8,9)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function after $2 \cdot p$ steps. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 2c was used. System (**??**), interval set representation and (8,9)-representation were used for the integration process. The data is stored in the file `steady_08_09_out_3/int_di.txt`.

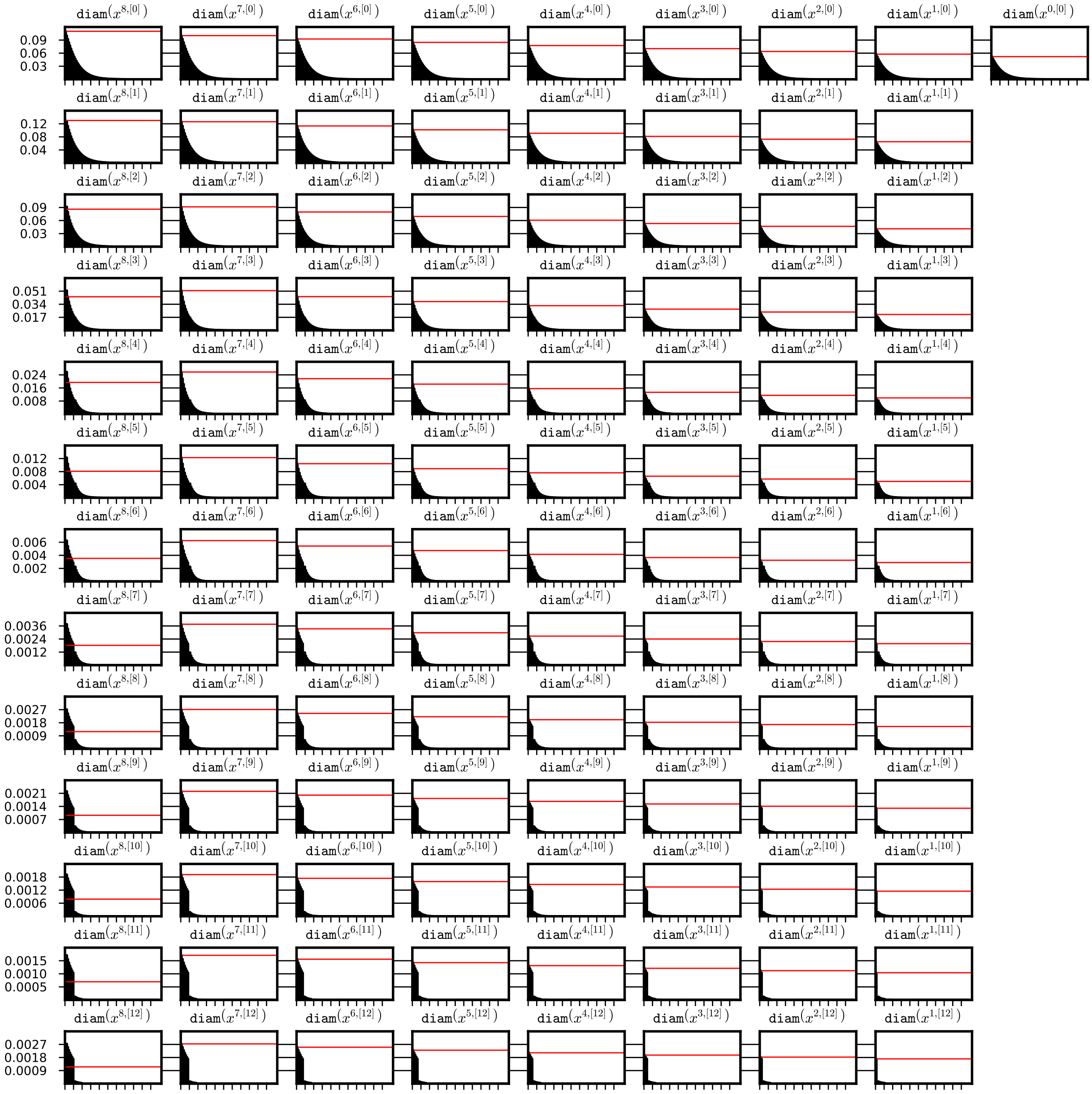

Figure 29: Diameters of the coefficients of a sequence $\{\Phi^n(\bar{x}_0)\}_{n\in\{16,..,8\cdot(11+2)\}}$ (a full history after $2\cdot p$ steps) for some (8,11)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), interval set representation and (8,11)-representation were used for the integration process. The data is stored in the file `steady_08_11_out_3/int_di.txt`.

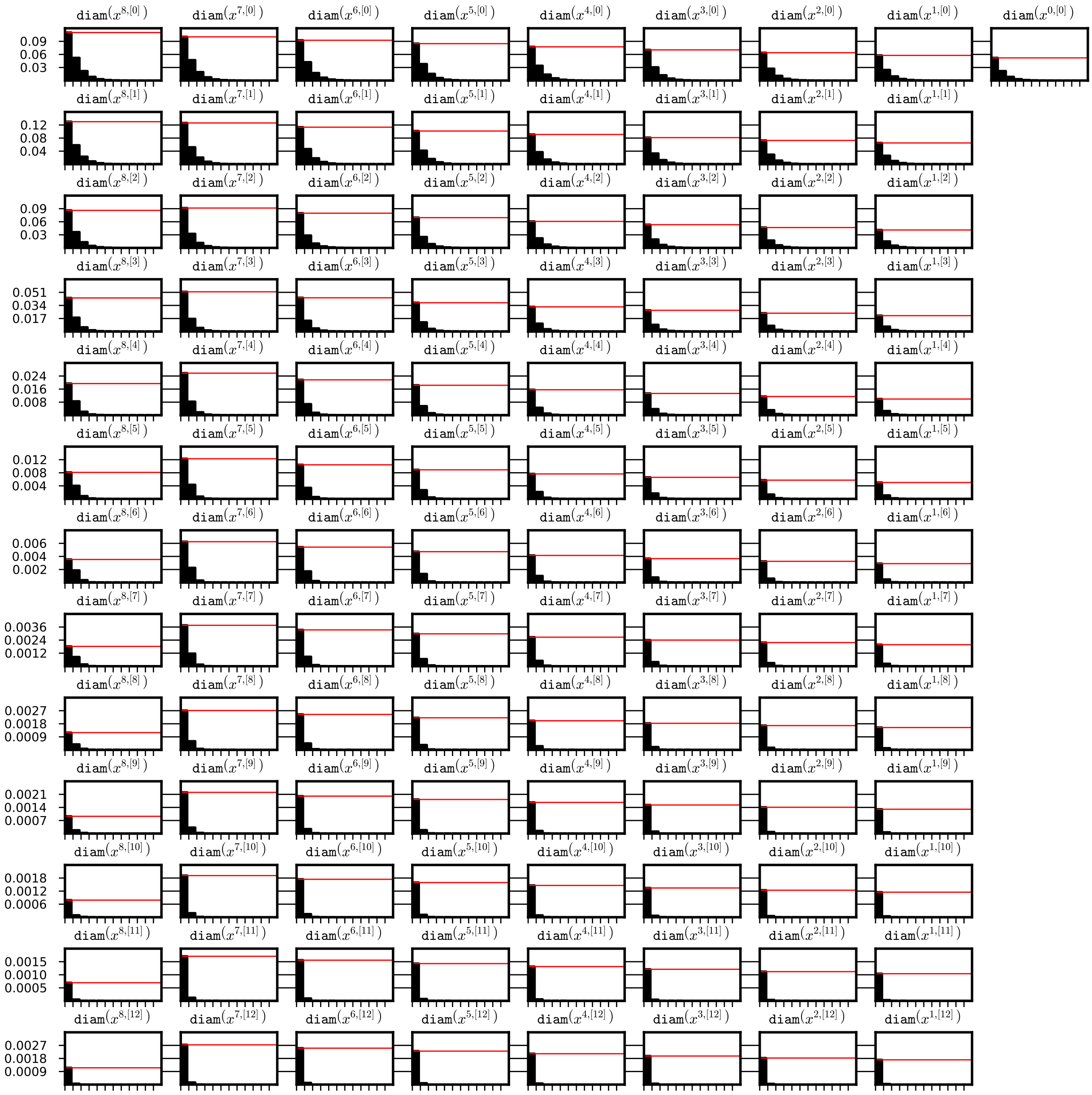

Figure 30: Diameters of the coefficients of a sequence $\left\{\Phi^{8\cdot n}(\bar{x}_0)\right\}_{n\in\{2,..,(11+2)\}}$ for some (8,11)-representation $\bar{x}_0$ of a stable stationary solution $x \equiv 0$ for system (**??**). Red horizontal line marks the diameter of the representation of the initial function after $2 \cdot p$ steps. On the x-axis we have the iteration steps, each tick represents p steps of iteration. The data from test 3c was used. System (**??**), interval set representation and (8,11)-representation were used for the integration process. The data is stored in the file `steady_08_11_out_3/int_di.txt`.

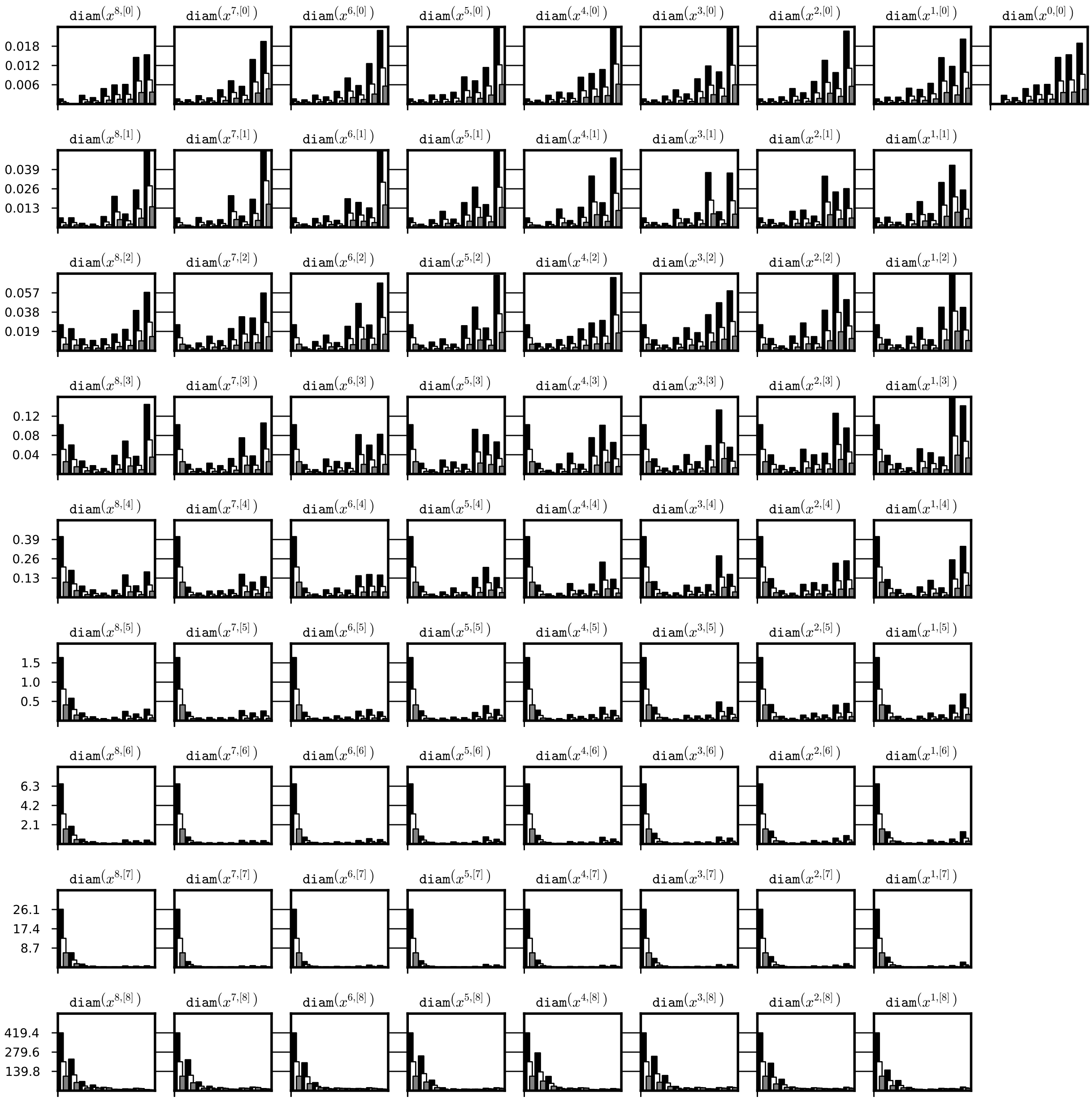

Figure 31: Dependence of the diameter of the interval set on the initial data diameter. A history of the integration of some neighbourhood of a stable periodic orbit for system (**??**) was recorded for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 1a, 1b, 1c (black, white, gray respectively). System (**??**), interval set representation and (8,7)-representation were used for the integration process. The data is stored the files `periodic_08_07_out_1/int_di.txt`, `periodic_08_07_out_2/int_di.txt` and `periodic_08_07_out_3/int_di.txt` respectively.

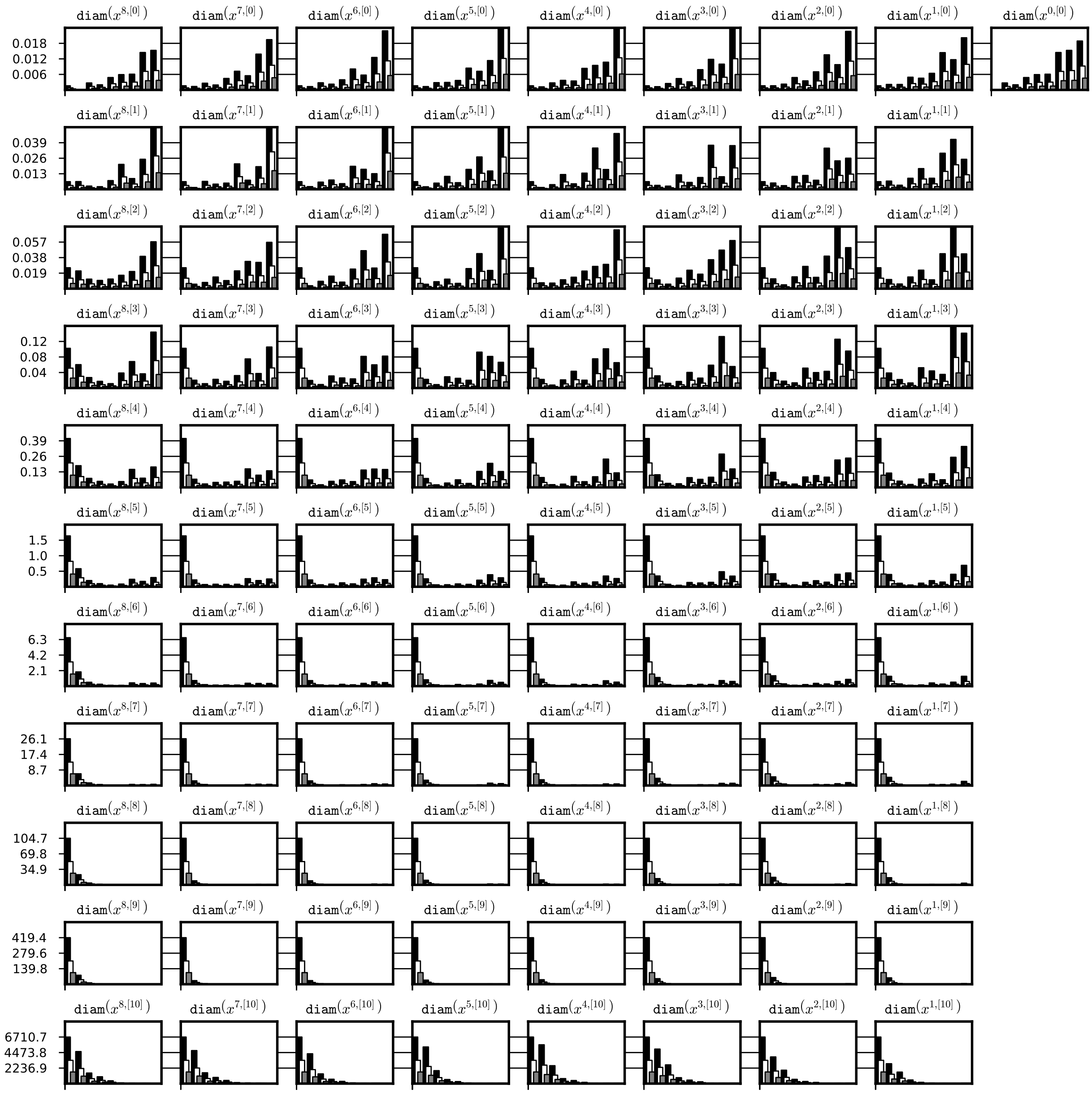

Figure 32: Dependence of the diameter of the interval set on the initial data diameter. A history of the integration of some neighbourhood of a stable periodic orbit for system (**??**) was recorded for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 2a, 2b, 2c (black, white, gray respectively). System (**??**), interval set representation and (8,9)-representation were used for the integration process. The data is stored the files `periodic_08_09_out_1/int_di.txt`, `periodic_08_09_out_2/int_di.txt` and `periodic_08_09_out_3/int_di.txt` respectively.

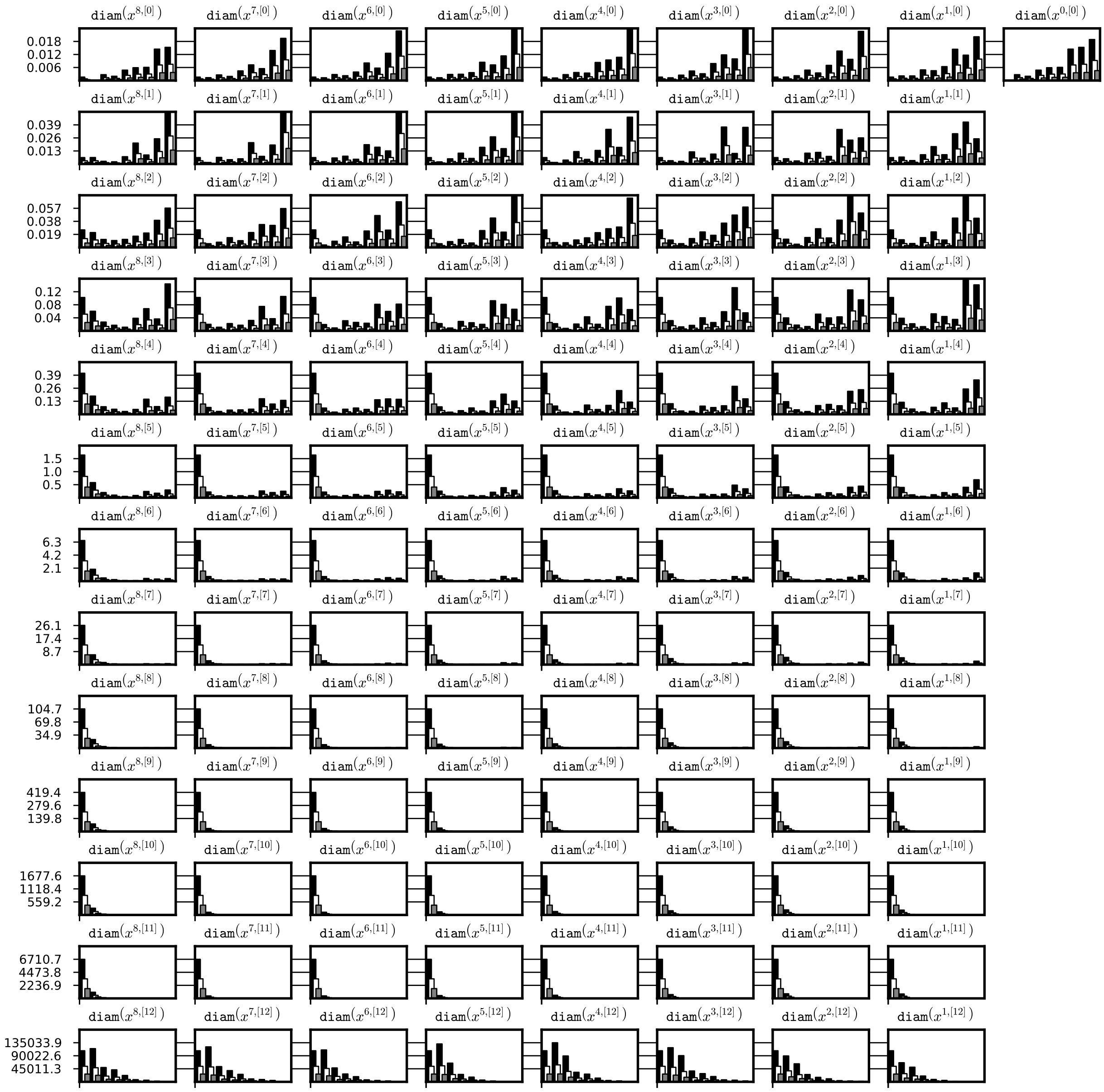

Figure 33: Dependence of the diameter of the interval set on the initial data diameter. A history of the integration of some neighbourhood of a stable periodic orbit for system (**??**) was recorded for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 3a, 3b, 3c (black, white, gray respectively). System (**??**), interval set representation and (8,11)-representation were used for the integration process. The data is stored the files `periodic_08_11_out_1/int_di.txt`, `periodic_08_11_out_2/int_di.txt` and `periodic_08_11_out_3/int_di.txt` respectively.

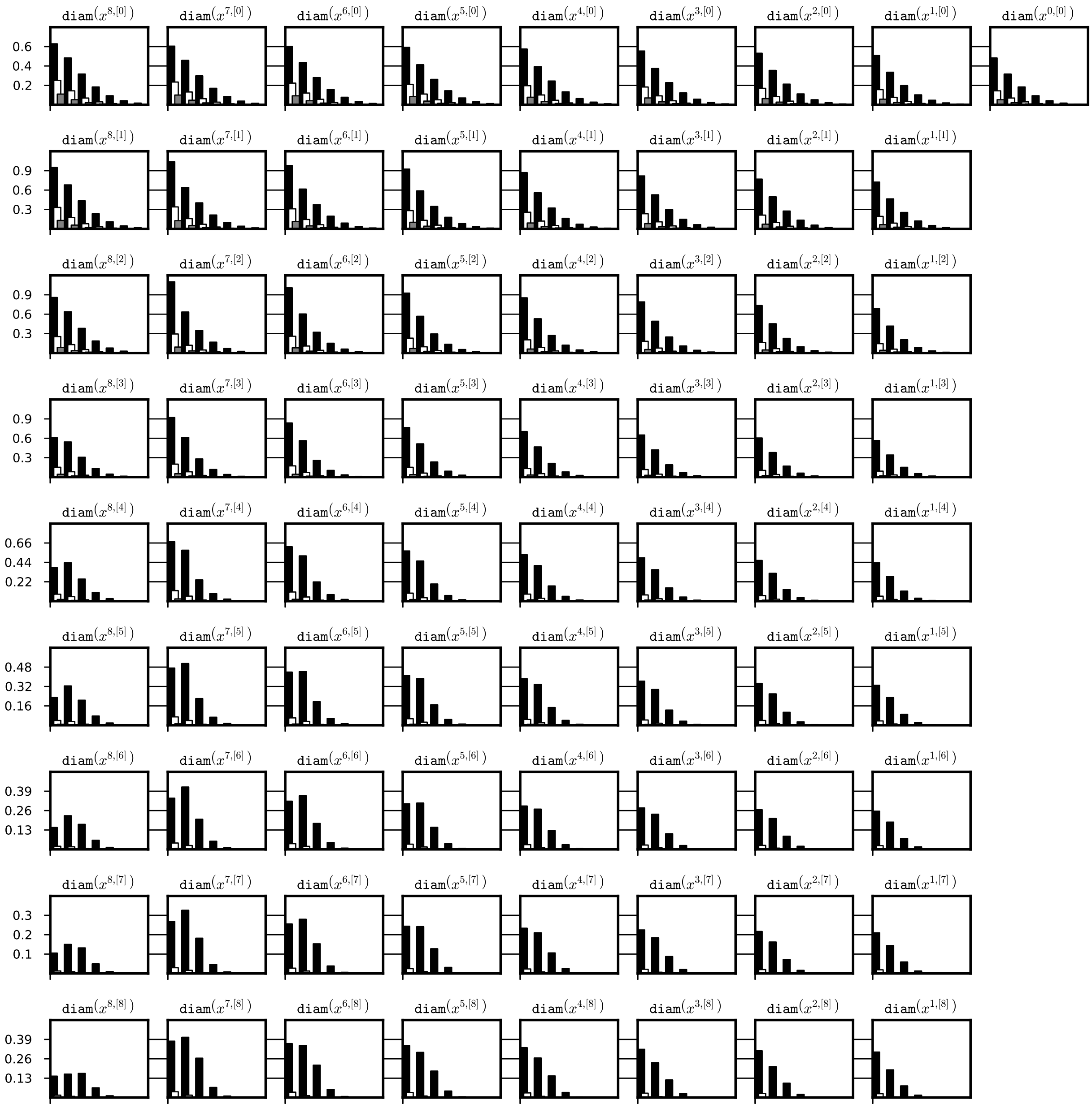

Figure 34: Dependence of the diameter of the interval set on the initial data diameter. After initial $2 \cdot p$ steps a history of the integration of some neighbourhood of a stable stationary solution $x \equiv 0$ to system (**??**) was recorded every p steps for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 1a, 1b, 1c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,7)-representation were used for the integration process. The data is stored the files `steady_08_07_out_1/int_di.txt`, `steady_08_07_out_2/int_di.txt` and `steady_08_07_out_3/int_di.txt` respectively.

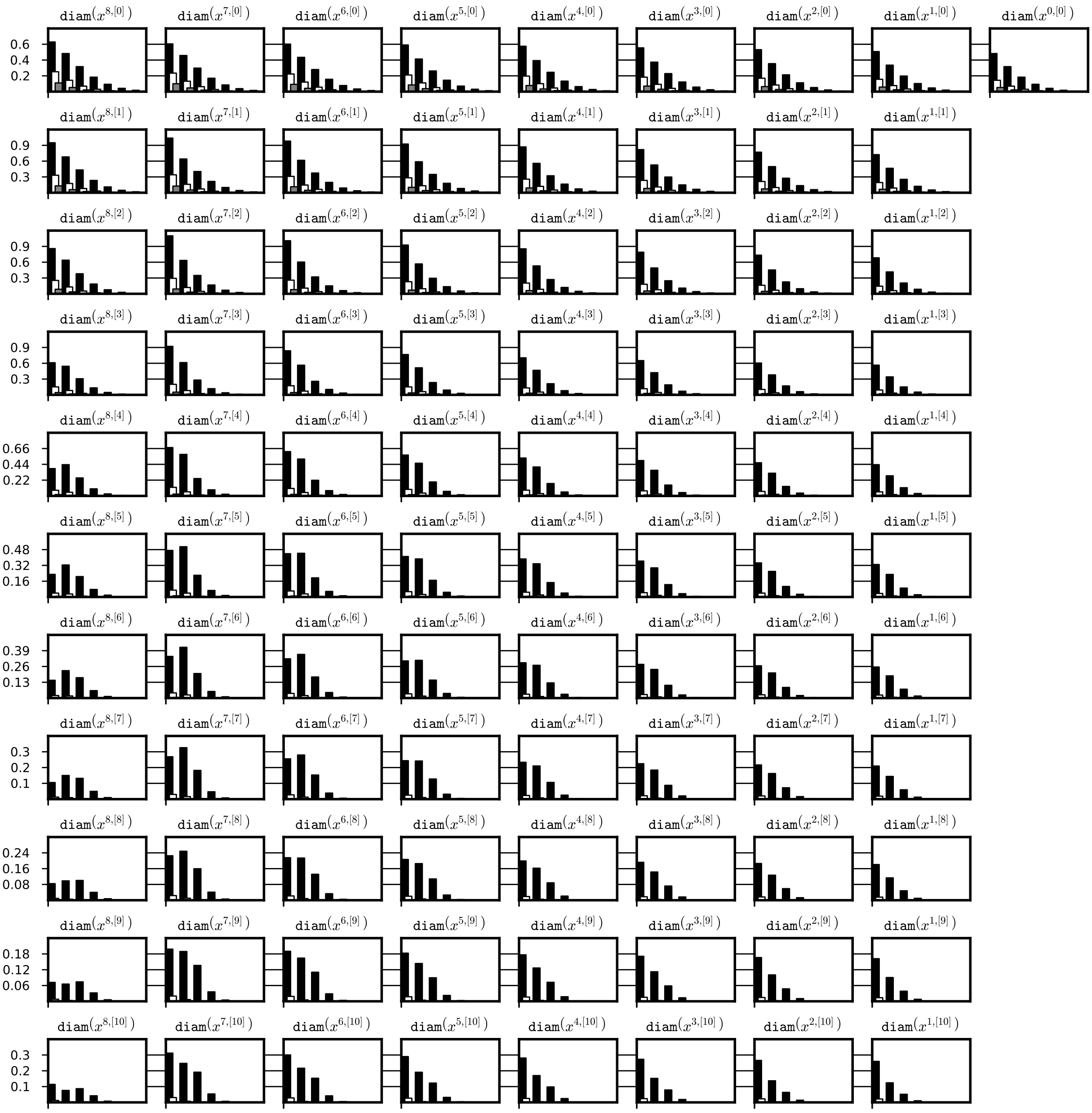

Figure 35: Dependence of the diameter of the interval set on the initial data diameter. After initial $2 \cdot p$ steps a history of the integration of some neighbourhood of a stable stationary solution $x \equiv 0$ to system (**??**) was recorded every p steps for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 2a, 2b, 2c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,9)-representation were used for the integration process. The data is stored the files `steady_08_09_out_1/int_di.txt`, `steady_08_09_out_2/int_di.txt` and `steady_08_09_out_3/int_di.txt` respectively.

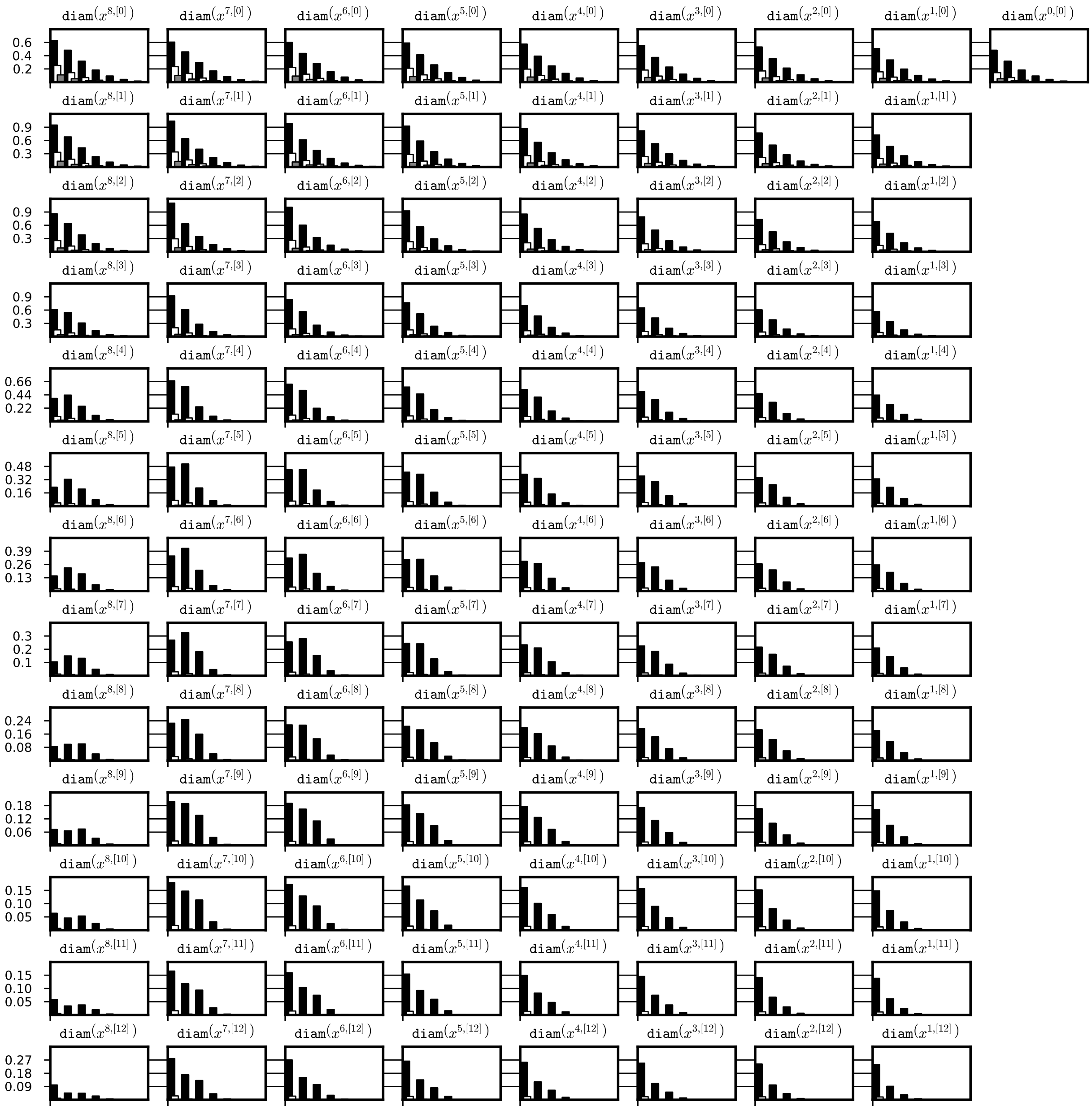

Figure 36: Dependence of the diameter of the interval set on the initial data diameter. After initial $2 \cdot p$ steps a history of the integration of some neighbourhood of a stable stationary solution $x \equiv 0$ to system (**??**) was recorded every p steps for three runs with initial data of decreasing diameter. On the x-axis we have the iteration steps, each bar is a diameter of the representation coefficient after p steps of iteration. The data is generated for tests 3a, 3b, 3c (black, white, gray respectively). System (**??**), doubleton Lohner set representation and (8,11)-representation were used for the integration process. The data is stored the files `steady_08_11_out_1/int_di.txt`, `steady_08_11_out_2/int_di.txt` and `steady_08_11_out_3/int_di.txt` respectively.

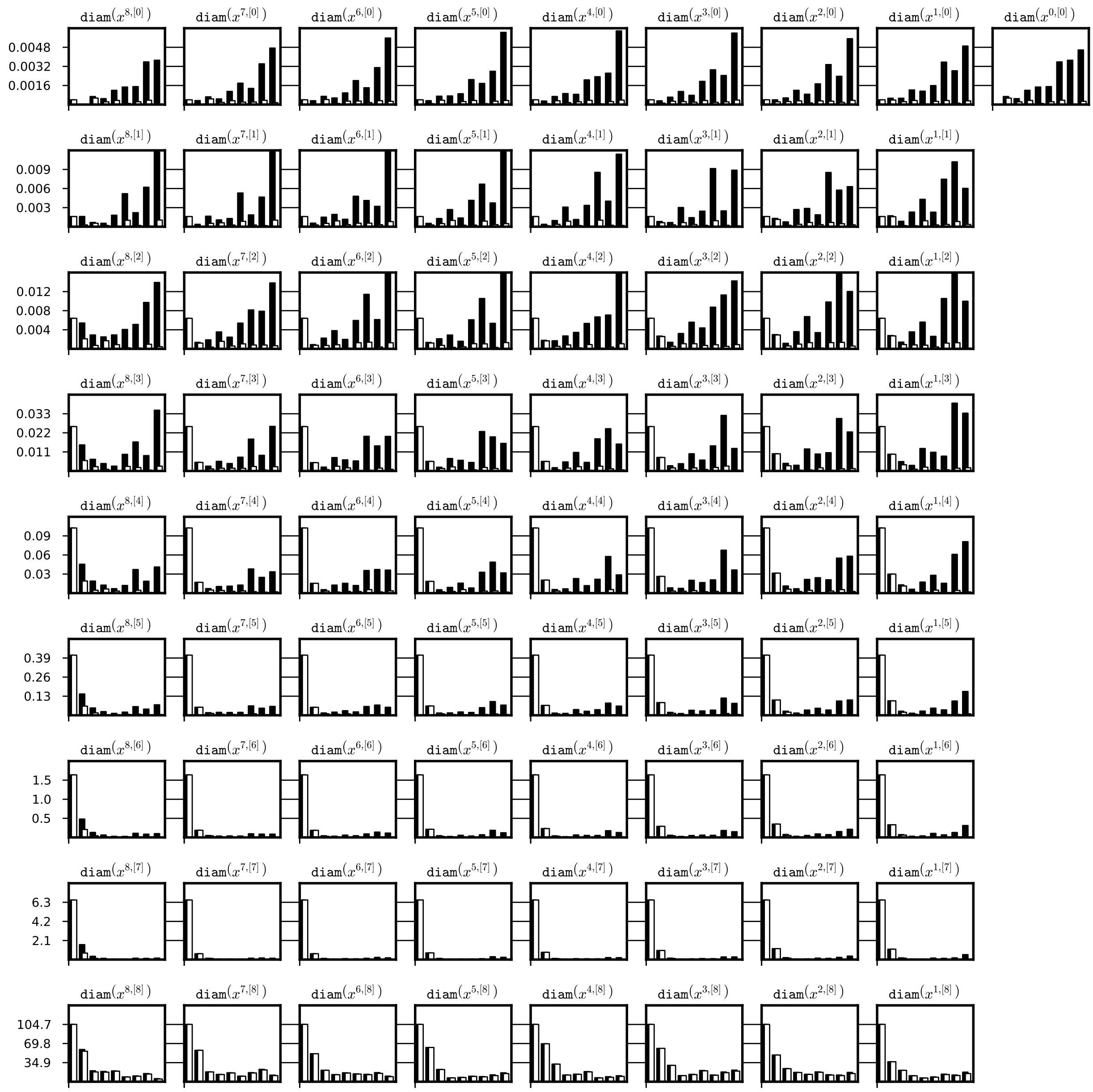

Figure 37: Comparision between basic interval numeric method (black) and a Lohner set representation by the doubleton $x_0 + C \cdot r_0 + B \cdot r$ (white). In both cases we have integrated the same initial representation of a stable periodic solution to system (**??**) and we have used interval set representation and (8,7)-representation. On the chart we present the diameter of the interval hull of each representation coefficient every 8 steps of the integration. The data is stored in the file `periodic_08_07_out_3/int_di.txt`.

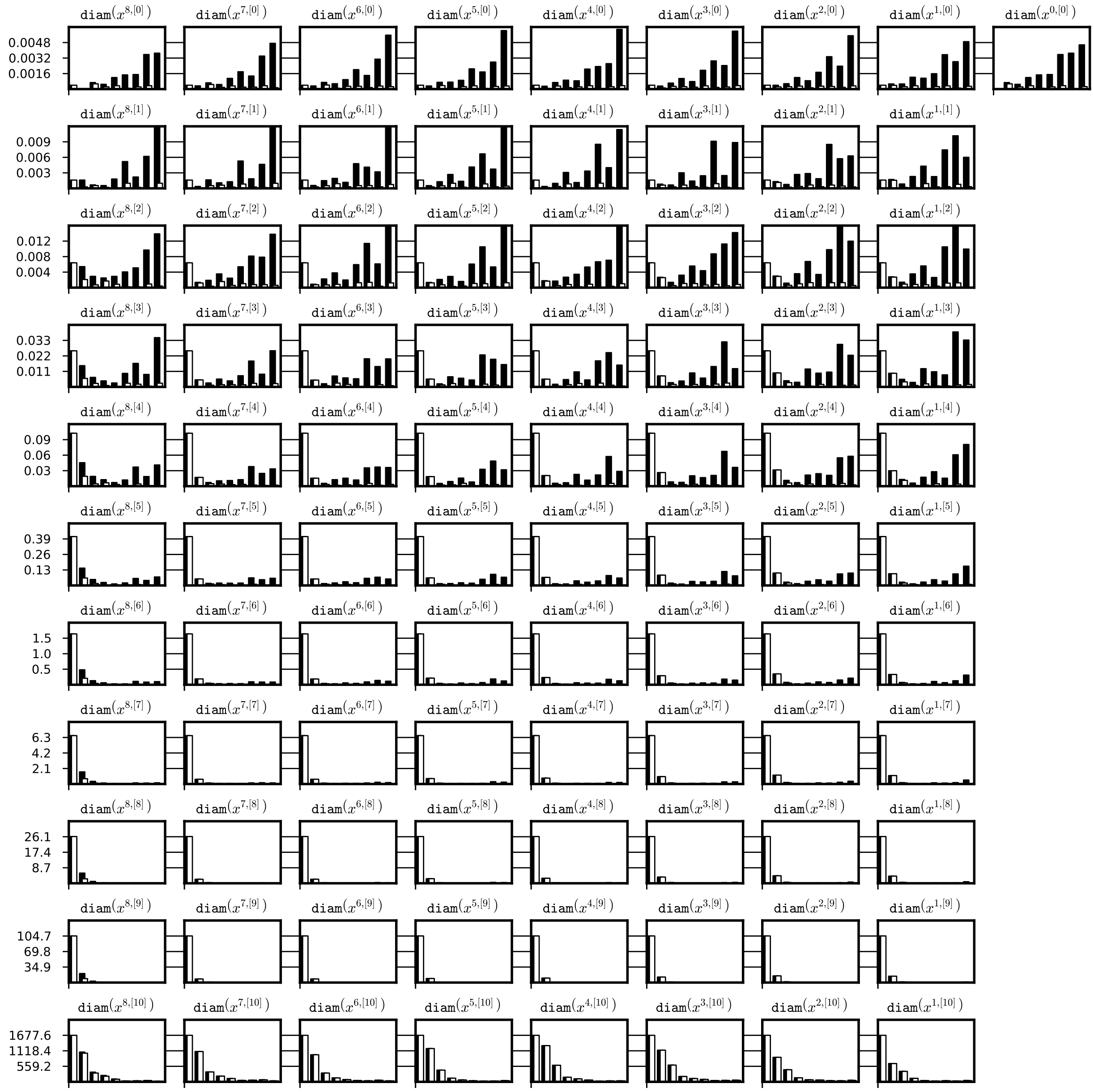

Figure 38: Comparision between basic interval numeric method (black) and a Lohner set representation by the doubleton $x_0 + C \cdot r_0 + B \cdot r$ (white). In both cases we have integrated the same initial representation of a stable periodic solution to system (**??**) and we have used interval set representation and (8,9)-representation. On the chart we present the diameter of the interval hull of each representation coefficient every 8 steps of the integration. The data is stored in the file `periodic_08_09_out_3/int_di.txt`.

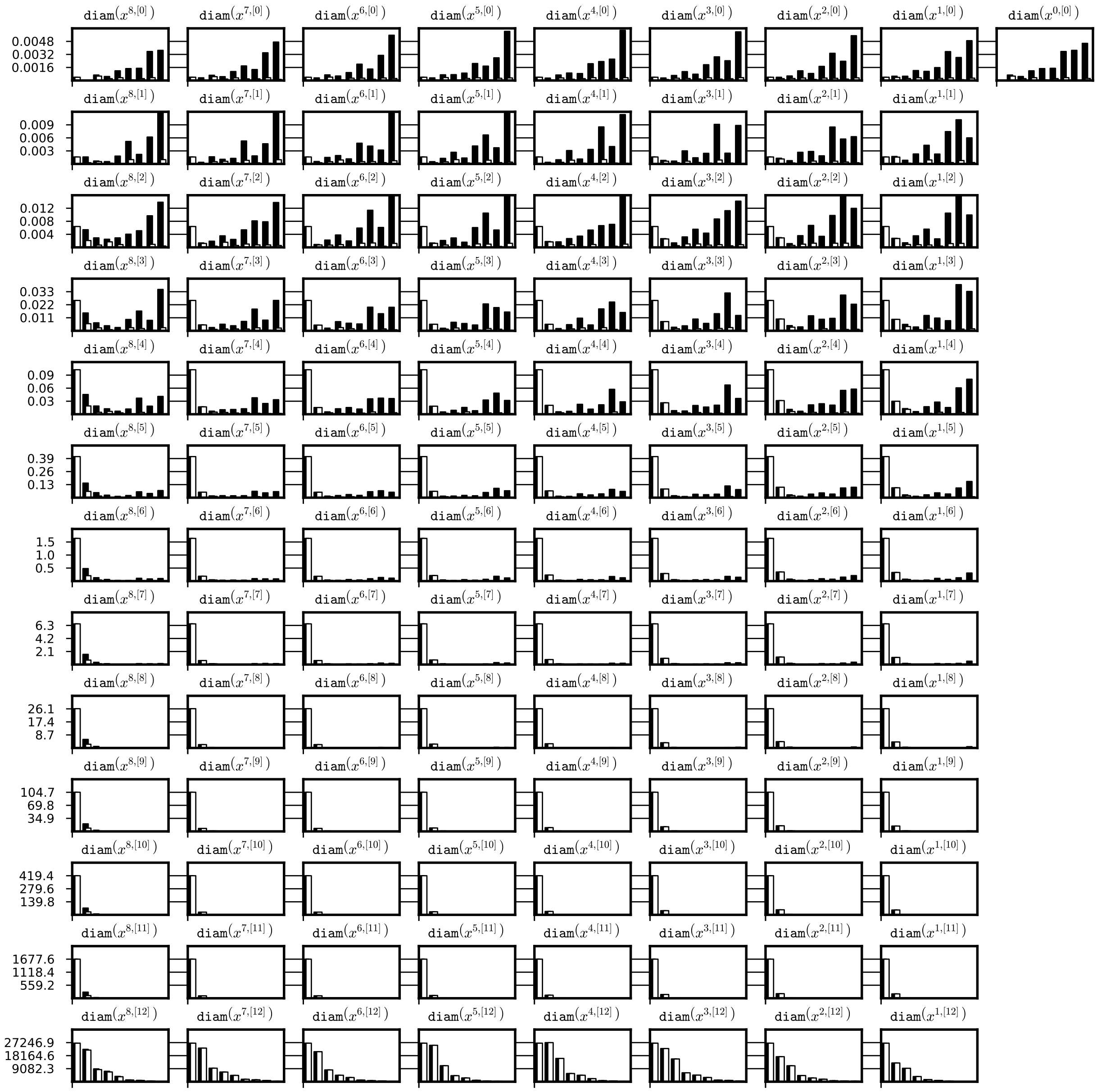

Figure 39: Comparision between basic interval numeric method (black) and a Lohner set representation by the doubleton $x_0 + C \cdot r_0 + B \cdot r$ (white). In both cases we have integrated the same initial representation of a stable periodic solution to system (**??**) and we have used interval set representation and (8,11)-representation. On the chart we present the diameter of the interval hull of each representation coefficient every 8 steps of the integration. The data is stored in the file `periodic_08_11_out_3/int_di.txt`.

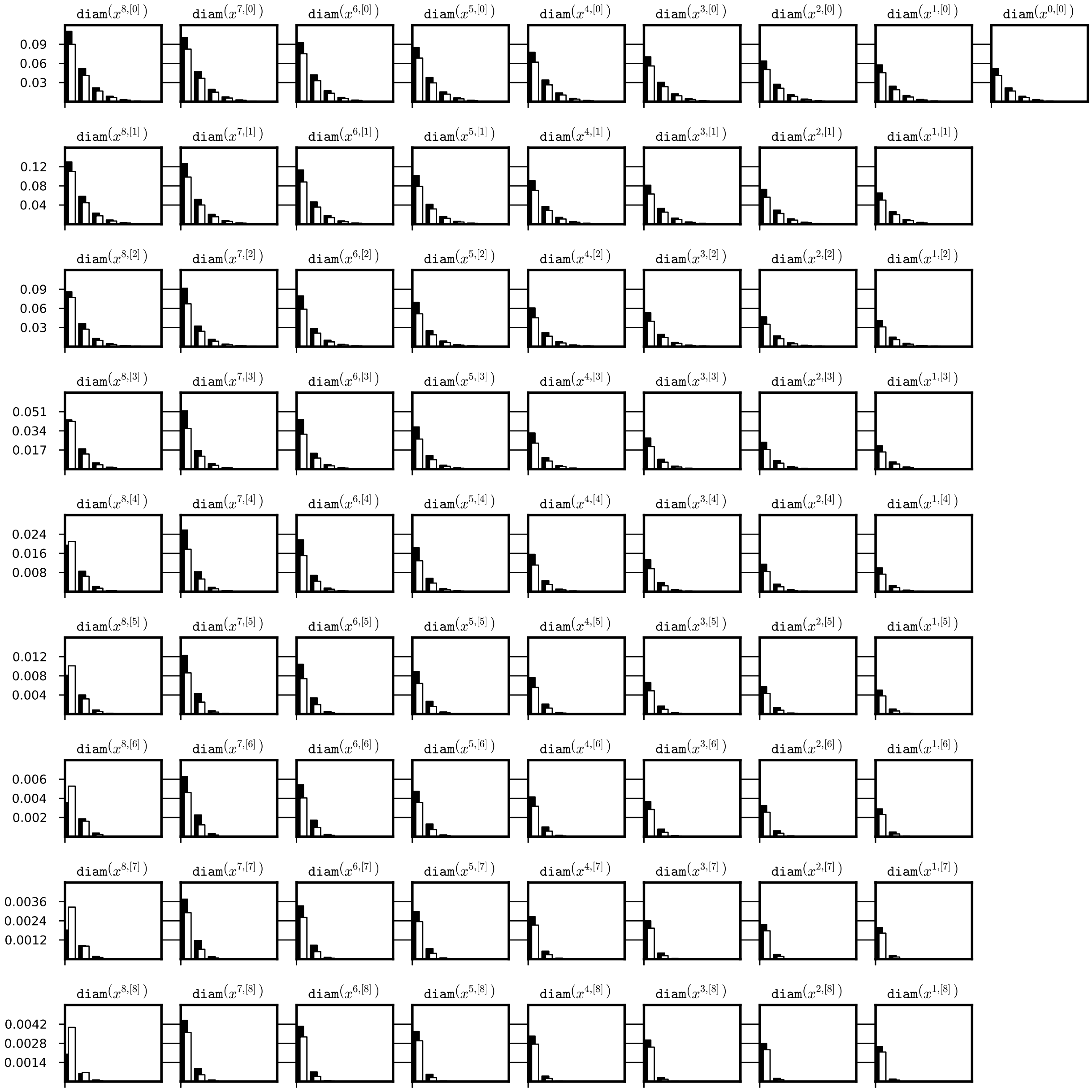

Figure 40: Comparision between basic interval numeric method (black) and a Lohner set representation by the doubleton $x_0 + C \cdot r_0 + B \cdot r$ (white). In both cases we have integrated the same initial representation of a stable stationary solution $x \equiv 0$ to system (**??**) and we have used interval set representation and (8,7)-representation. On the chart we present the diameter of the interval hull of each representation coefficient every 8 steps of the integration. The data from test 1c was used. The data is stored in the file `steady_08_07_out_3/int_di.txt`.

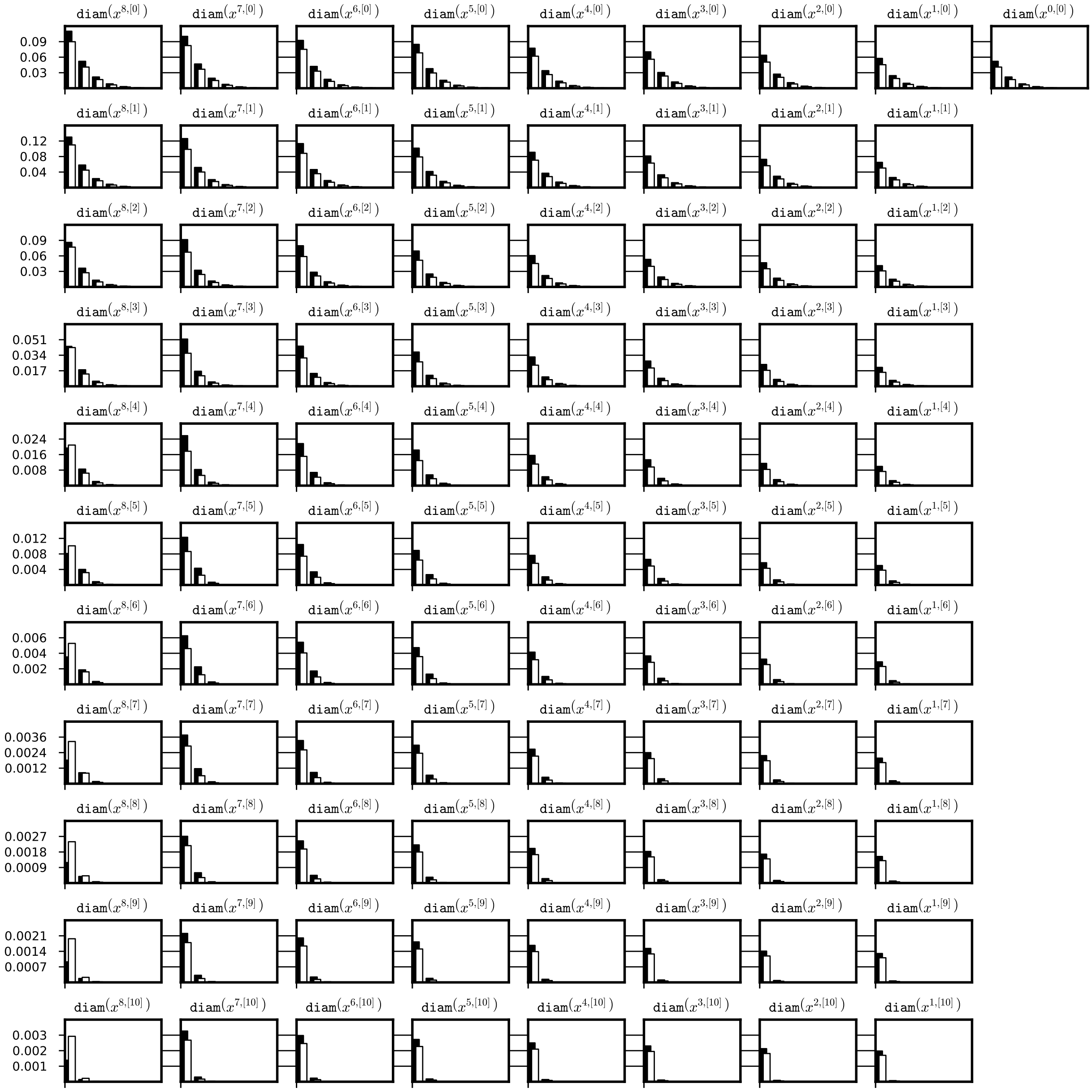

Figure 41: Comparision between basic interval numeric method (black) and a Lohner set representation by the doubleton $x_0+C\cdot r_0+B\cdot r$ (white). In both cases we have integrated the same initial representation of a stable stationary solution $x \equiv 0$ to system (**??**) and we have used interval set representation and (8,9)-representation. On the chart we present the diameter of the interval hull of each representation coefficient every 8 steps of the integration. The data from test 2c was used. The data is stored in the file `steady_08_09_out_3/int_di.txt`.

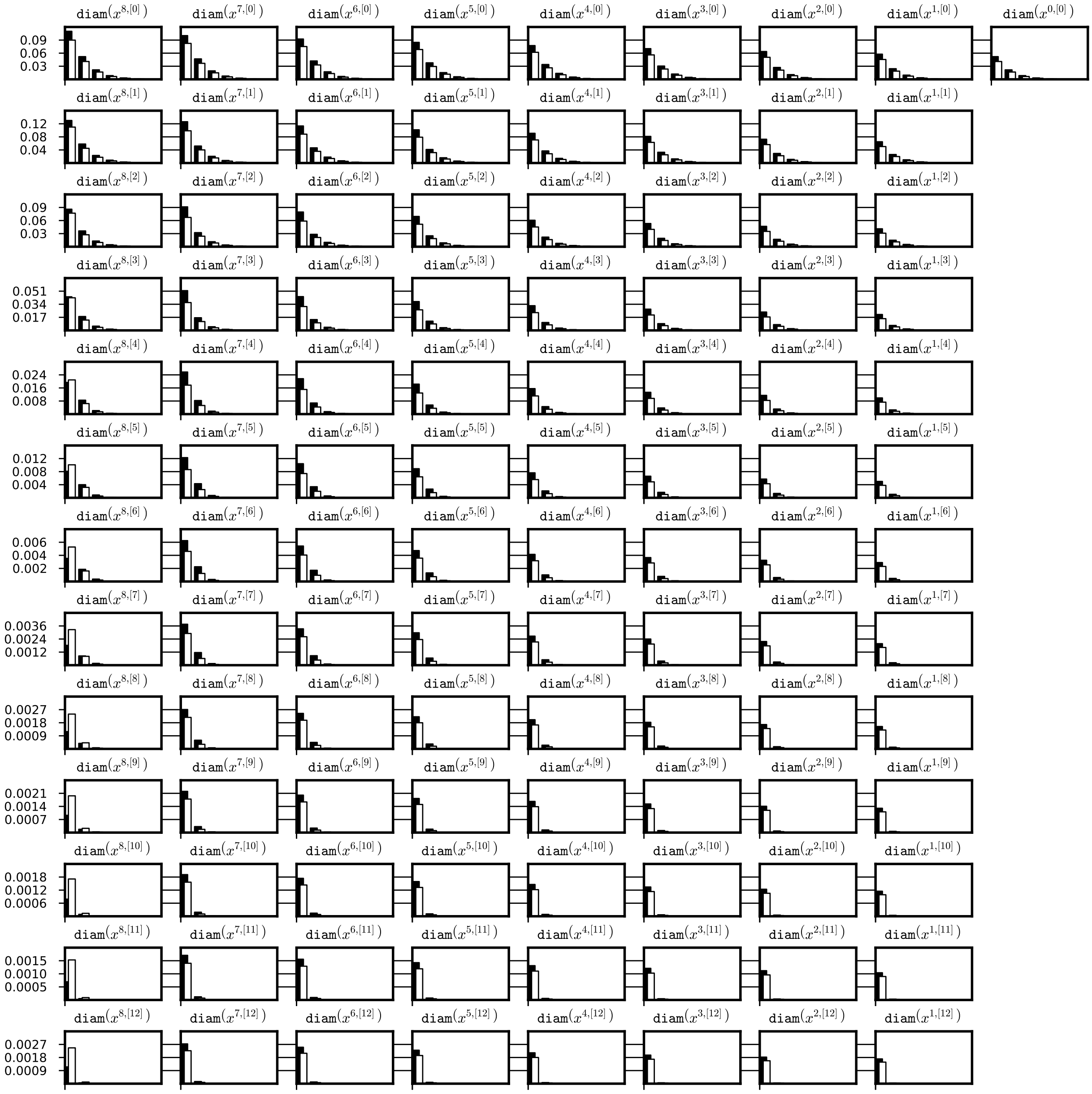

Figure 42: Comparision between basic interval numeric method (black) and a Lohner set representation by the doubleton $x_0+C\cdot r_0+B\cdot r$ (white). In both cases we have integrated the same initial representation of a stable stationary solution $x \equiv 0$ to system (**??**) and we have used interval set representation and (8,11)-representation. On the chart we present the diameter of the interval hull of each representation coefficient every 8 steps of the integration. The data from test 3c was used. The data is stored in the file `steady_08_11_out_3/int_di.txt`.

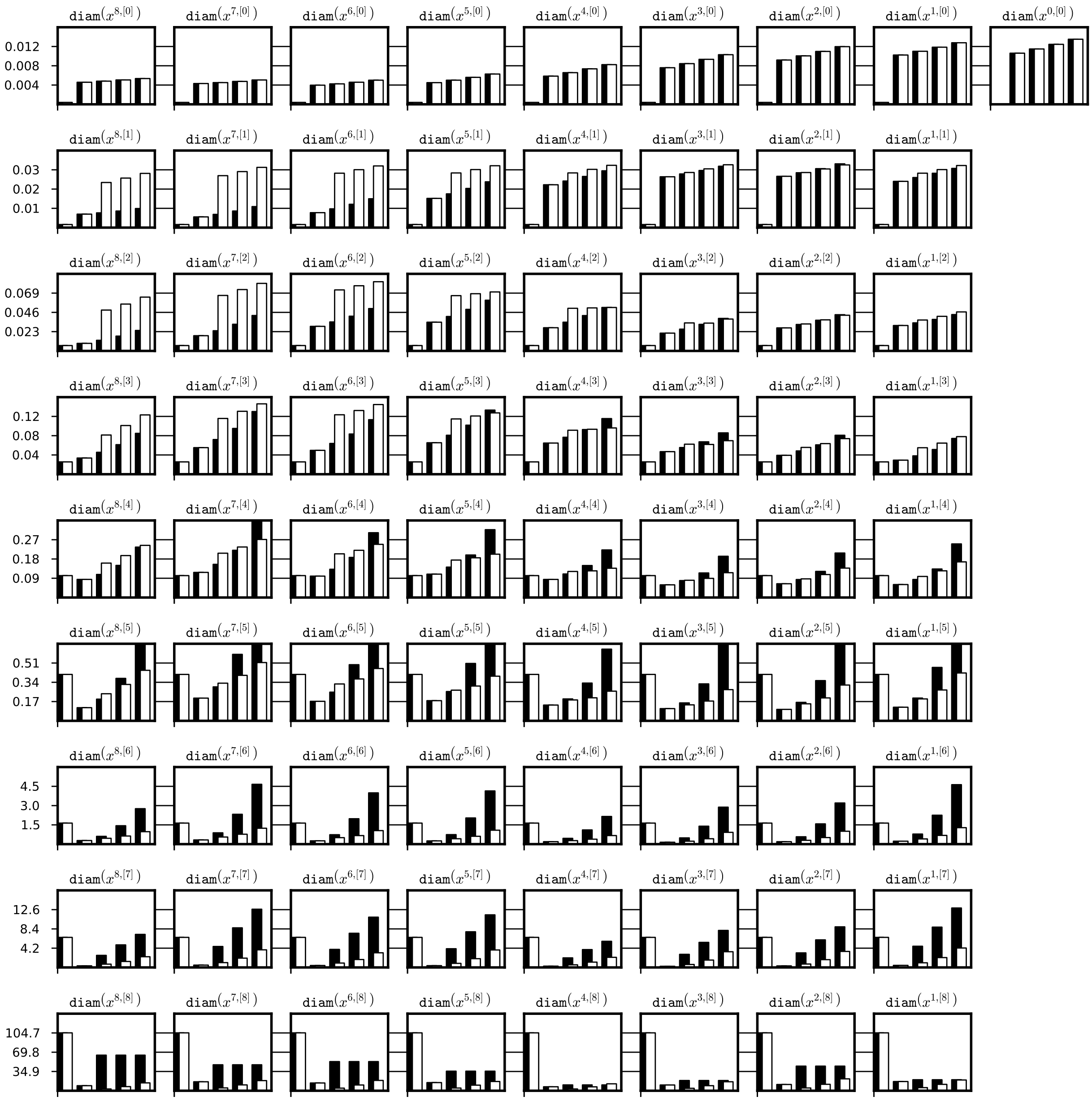

Figure 43: Performance of the ε-methods H_1 and H_2 (black and white respectively) computed for three values of the step size $\varepsilon \in \left\{\frac{1}{4} \cdot h, \frac{1}{2} \cdot h, \frac{3}{4} \cdot h\right\}$ (second, third and fourth column respectively). In the first column we have diameter of a set $\bar{x}_{before}$ used to compute ε-method, $\bar{x}_{before} = \Phi^{p\cdot(n+2)}(\bar{x}_0)$ for initial representation $\bar{x}_0$ of a stable periodic solution for system (**??**). System (**??**), interval set representation and (8,7)-representation were used for integration. The data from test 1c was used. Presented data for ε-methods H_1 and H_2 is stored in files `periodic_08_07_out_3/di_epsi_1_int.txt` and `periodic_08_07_out_3/di_epsi_2_int.txt` respectively.

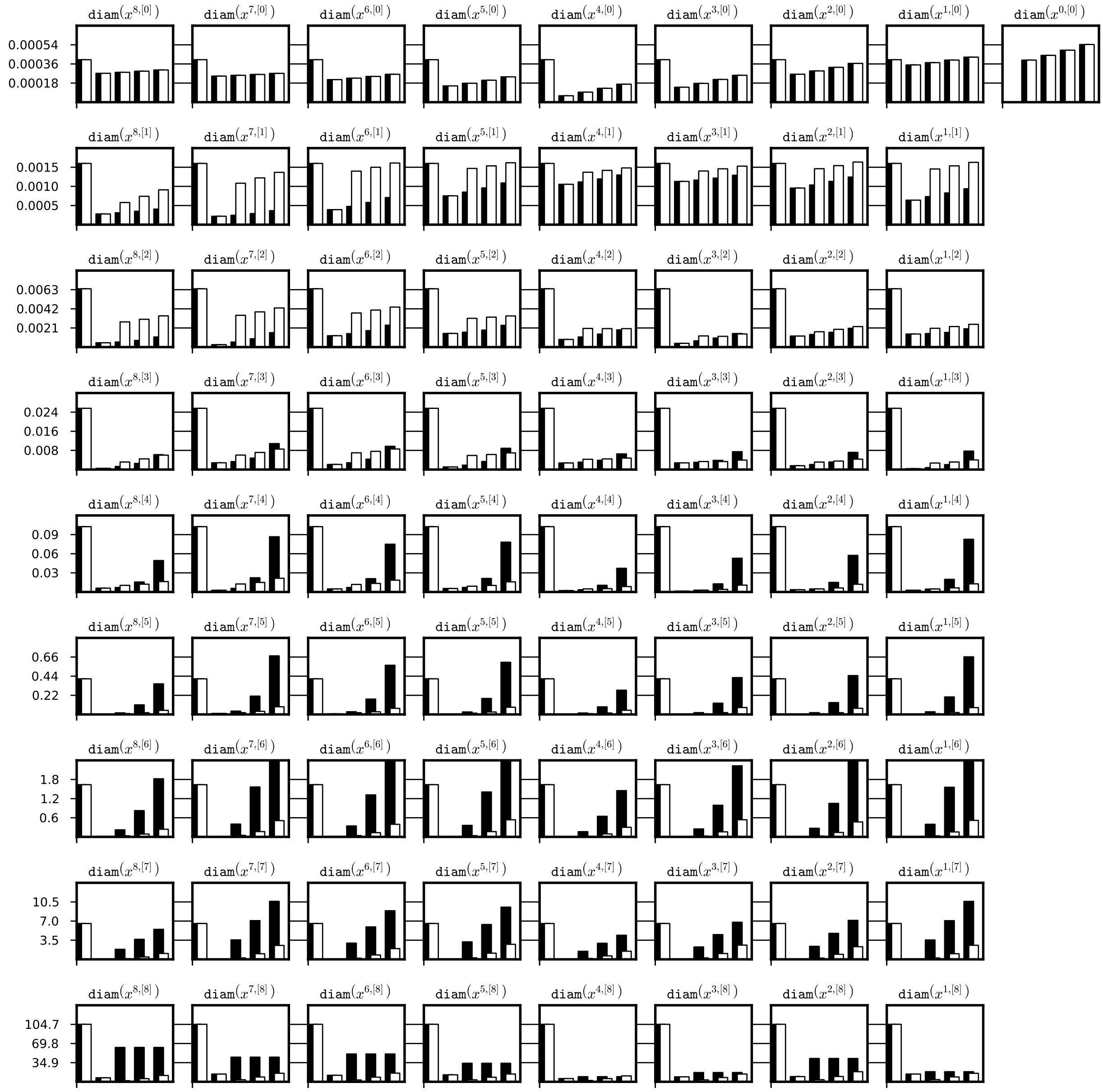

Figure 44: Performance of the ε-methods H_1 and H_2 (black and white respectively) computed for three values of the step size $\varepsilon \in \left\{\frac{1}{4} \cdot h, \frac{1}{2} \cdot h, \frac{3}{4} \cdot h\right\}$ (second, third and fourth column respectively). In the first column we have diameter of a set $\bar{x}_{before}$ used to compute ε-method, $\bar{x}_{before} = \Phi^{p \cdot (n+2)}(\bar{x}_0)$ for initial representation $\bar{x}_0$ of a stable periodic solution for system (**??**). System (**??**), doubleton Lohner set representation and (8,7)-representation were used for integration. The data from test 1c was used. Presented data for ε-methods H_1 and H_2 is stored in files `periodic_08_07_out_3/di_epsi_1_rect.txt` and `periodic_08_07_out_3/di_epsi_2_rect.txt` respectively.

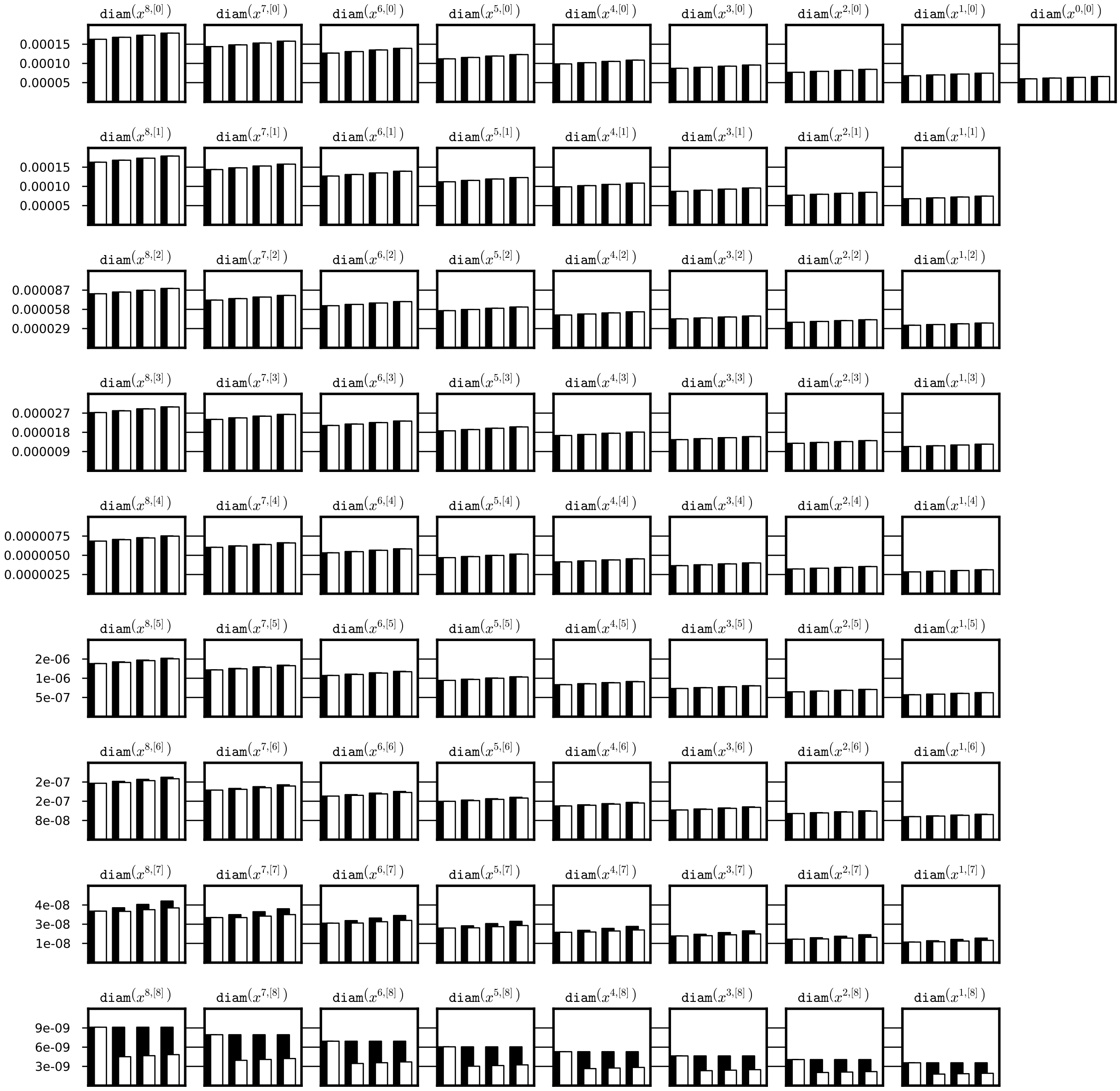

Figure 45: Performance of the ε-methods H_1 and H_2 (black and white respectively) computed for three values of the step size $\varepsilon \in \left\{\frac{1}{4}\cdot h, \frac{1}{2}\cdot h, \frac{3}{4}\cdot h\right\}$ (second, third and fourth column respectively). In the first column we have diameter of a set $\bar{x}_{before}$ used to compute ε-method, $\bar{x}_{before} = \Phi^{p\cdot(n+2)}(\bar{x}_0)$ for initial representation $\bar{x}_0$ of a stable stationary solution for system (**??**). System (**??**), interval set representation and (8,7)-representation were used for integration. The data from test 1c was used. Presented data for ε-methods H_1 and H_2 is stored in files `steady_08_07_out_3/di_epsi_1_int.txt` and `steady_08_07_out_3/di_epsi_2_int.txt` respectively.

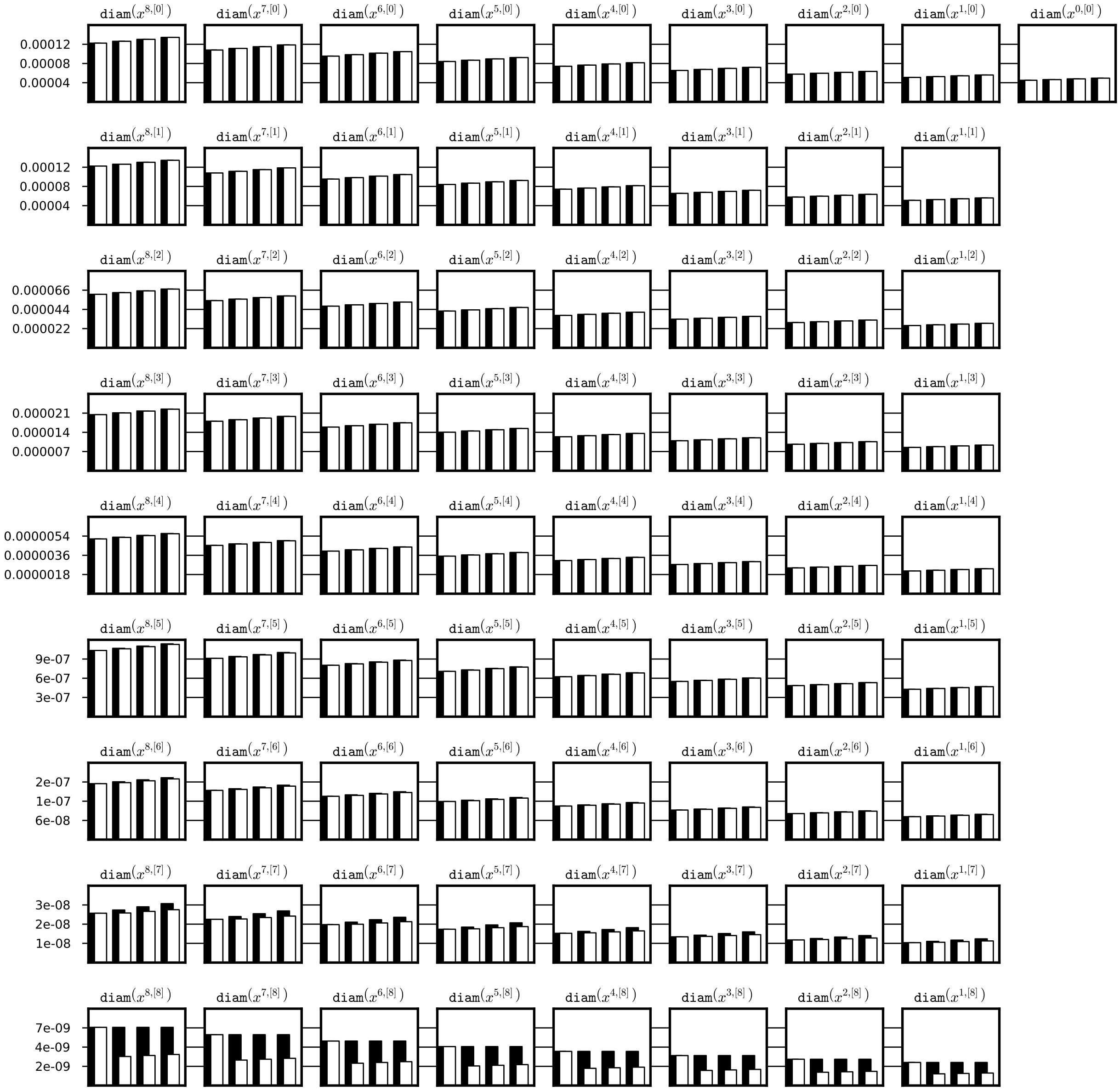

Figure 46: Performance of the ε-methods H_1 and H_2 (black and white respectively) computed for three values of the step size $\varepsilon \in \left\{\frac{1}{4} \cdot h, \frac{1}{2} \cdot h, \frac{3}{4} \cdot h\right\}$ (second, third and fourth column respectively). In the first column we have diameter of a set $\bar{x}_{before}$ used to compute ε-method, $\bar{x}_{before} = \Phi^{p \cdot (n+2)}(\bar{x}_0)$ for initial representation $\bar{x}_0$ of a stable stationary solution for system (**??**). System (**??**), doubleton Lohner set representation and (8,7)-representation were used for integration. The data from test 1c was used. Presented data for ε-methods H_1 and H_2 is stored in files `steady_08_07_out_3/di_epsi_1_rect.txt` and `steady_08_07_out_3/di_epsi_2_rect.txt` respectively.

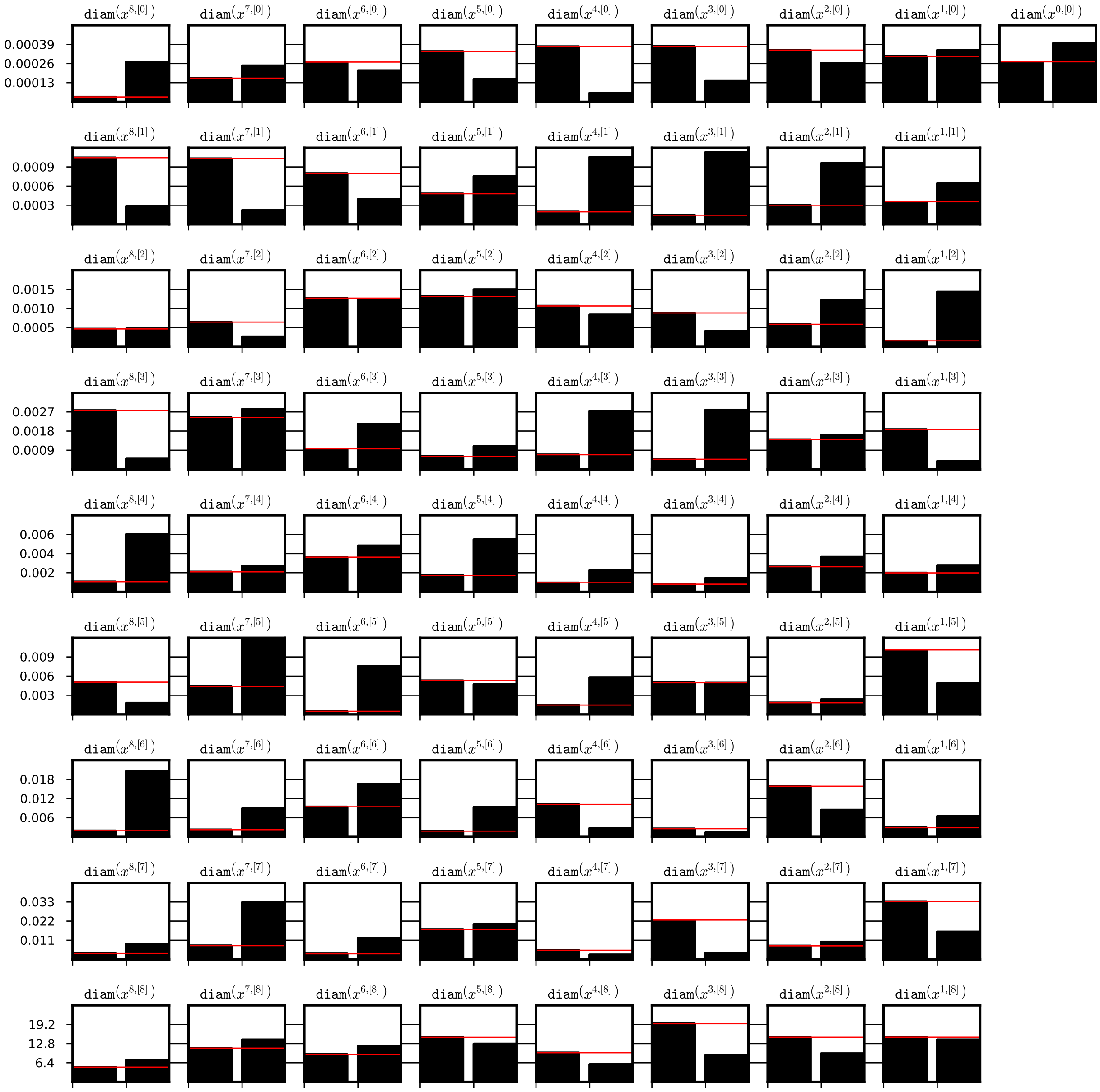

Figure 47: A full history of the integration of a (8,7)-representation.

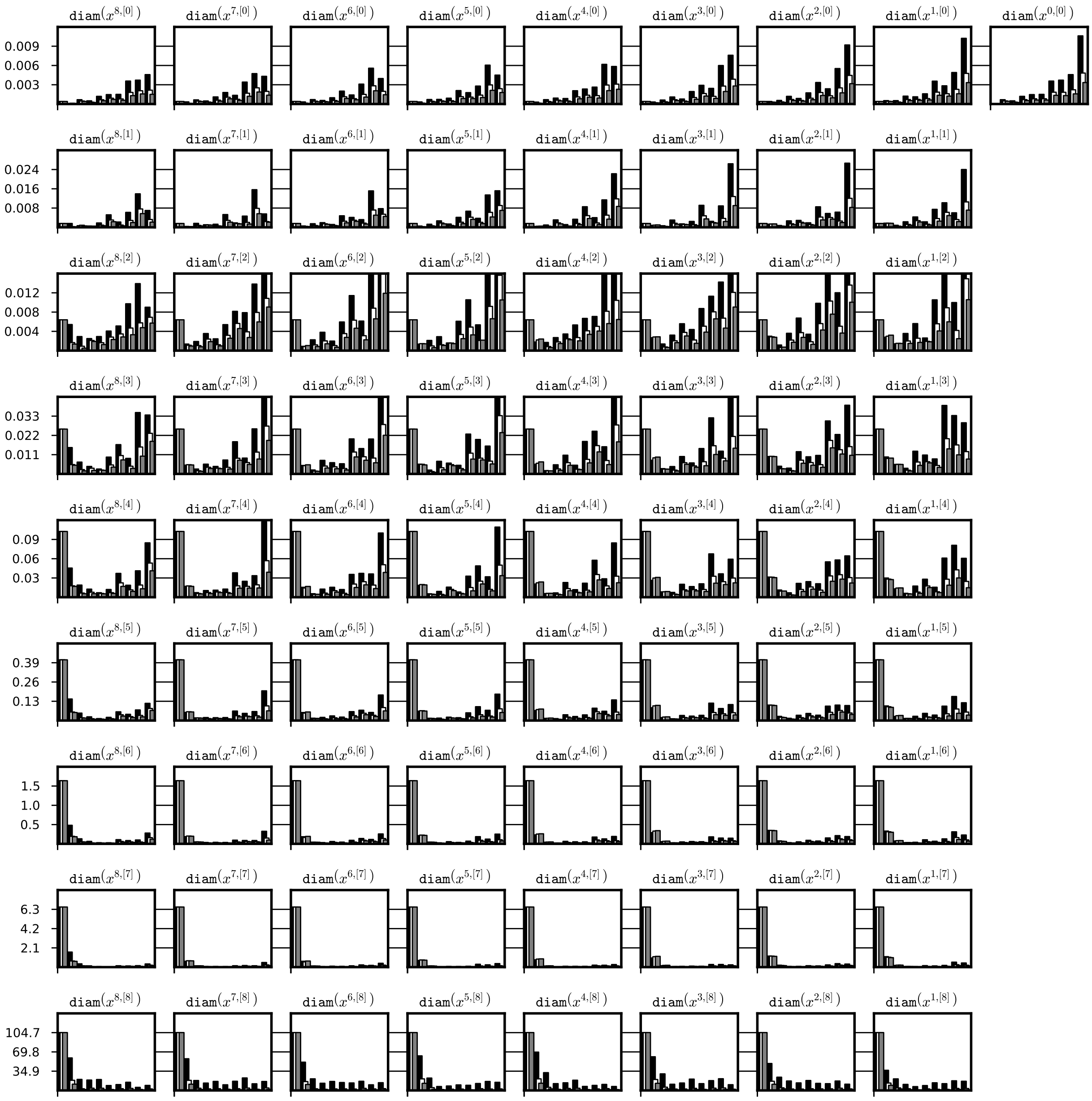

Figure 48: Dependence of the diameter of the representation on the grid size p. A history of one integration of three representations of a stable periodic orbit for system (**??**) for parameter $p \in \{8, 16, 32\}$ was recorded every p steps (black, white, gray respectively). The diameters of corresponding representation coefficients (i.e. that represents appropriate derivative at the same time t) are drawn for comparision, i.e. $x^{i,[p]}$ for $p = 8$, $x^{2 \cdot i,[p]}$ for $p = 16$ and $x^{4 \cdot i,[p]}$ for $p = 32$. Each bar is a diameter of the representation coefficient after p steps of iteration. The tests used are: 1c, 4, 5 (black, white, gray respectively). For all integrations the system (**??**) and interval set representation were used. The data is stored the files `periodic_08_07_out_3/int_di_p.txt`, `periodic_16_07_out/int_di_p.txt` and `periodic_32_07_out/int_di_p.txt` respectively.

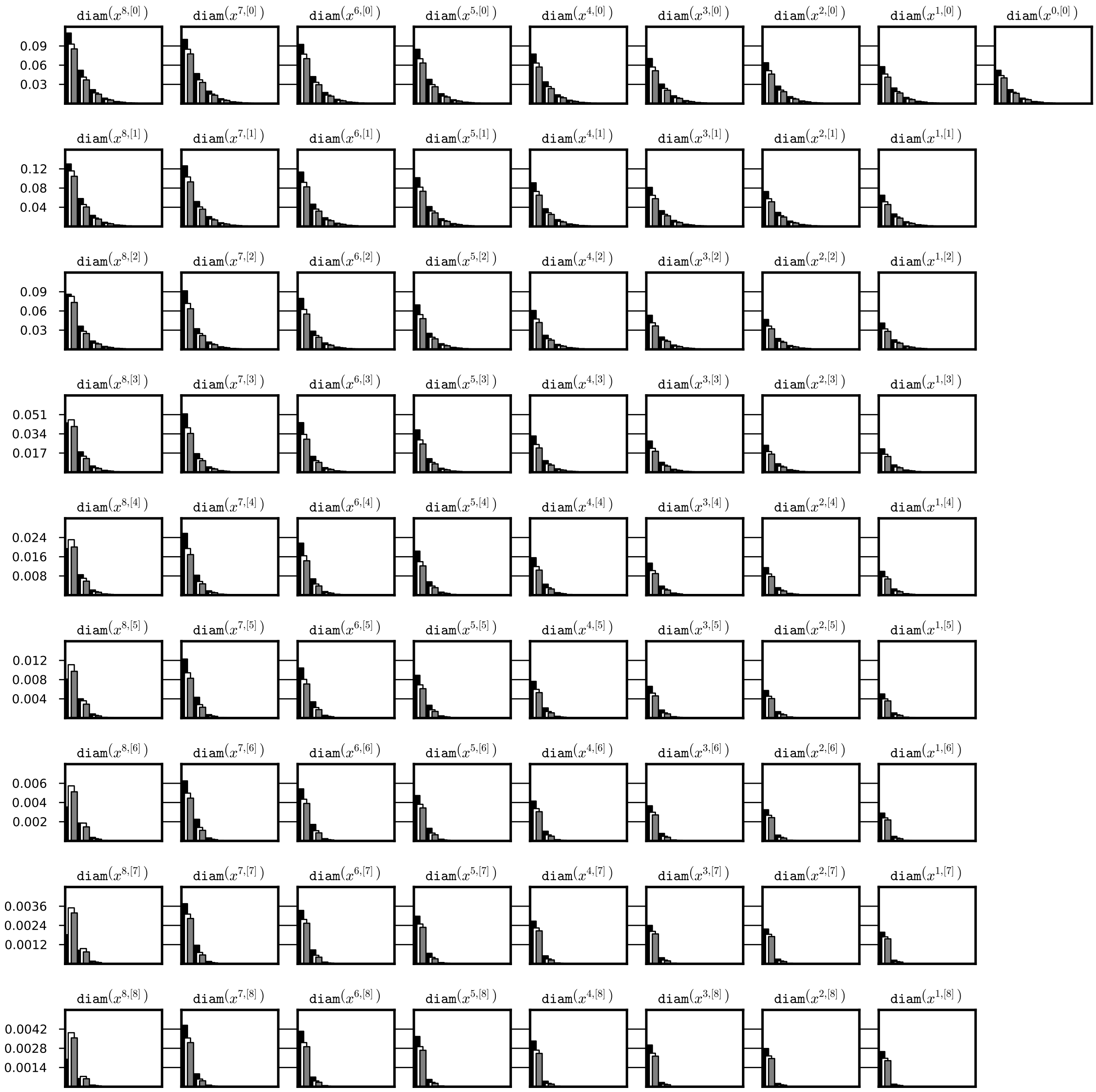

Figure 49: Dependence of the diameter of the representation on the grid size p. A history of one integration of three representations of a stable stationary solution $x \equiv 0$ for system (**??**) for parameter $p \in \{8, 16, 32\}$ was recorded every p steps (black, white, gray respectively). The diameters of corresponding representation coefficients (i.e. that represents appropriate derivative at the same time t) are drawn for comparision, i.e. $x^{i,[p]}$ for $p = 8$, $x^{2 \cdot i,[p]}$ for $p = 16$ and $x^{4 \cdot i,[p]}$ for $p = 32$. Each bar is a diameter of the representation coefficient after p steps of iteration. The tests used are: 1c, 4, 5 (black, white, gray respectively). For all integrations the system (**??**) and interval set representation were used. The data is stored the files `steady_08_07_out_3/int_di_p.txt`, `steady_16_07_out/int_di_p.txt` and `steady_32_07_out/int_di_p.txt` respectively.

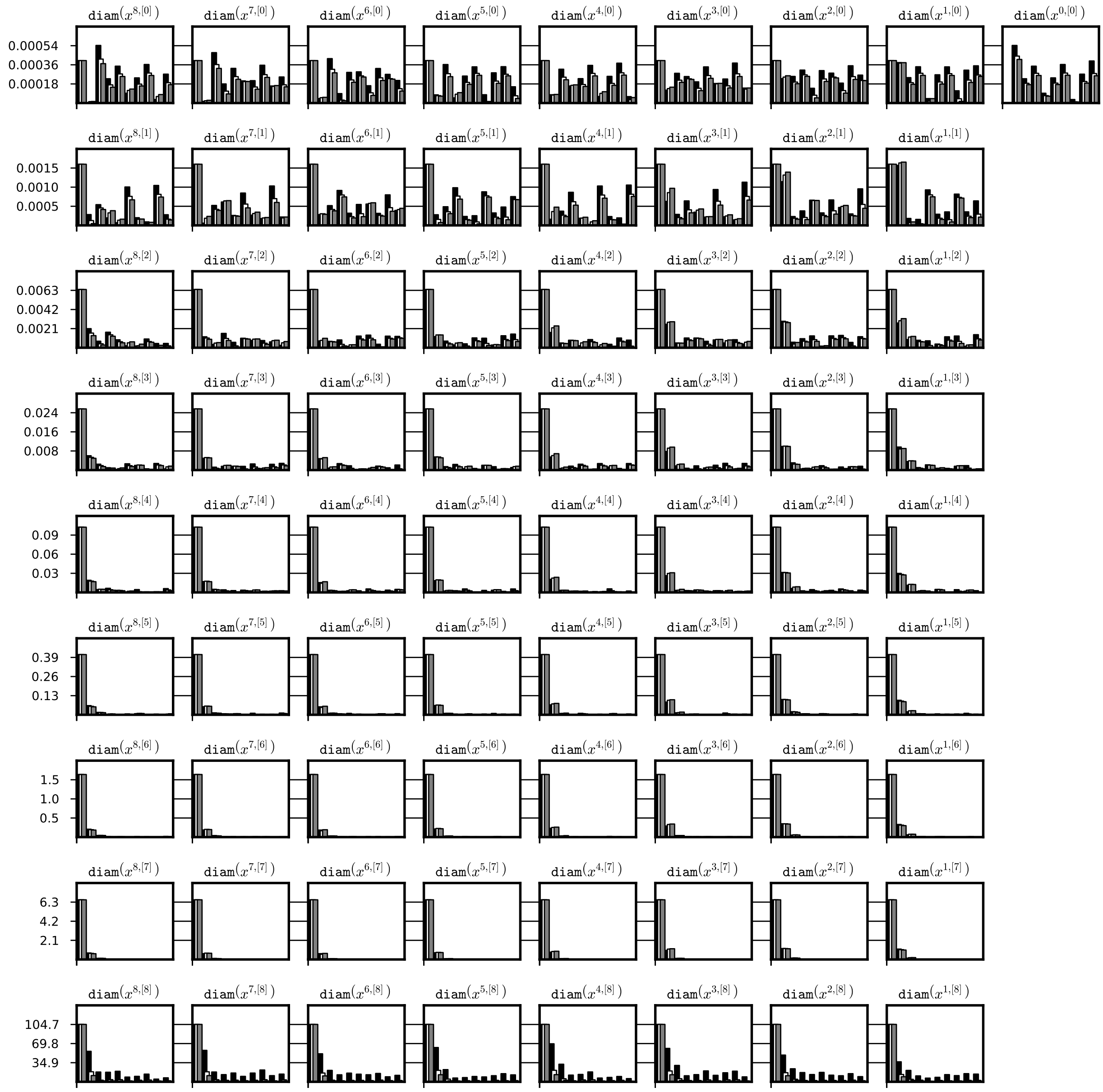

Figure 50: Dependence of the diameter of the representation on the grid size p. A history of one integration of three representations of a stable periodic orbit for system (**??**) for parameter $p \in \{8, 16, 32\}$ was recorded every p steps (black, white, gray respectively). The diameters of corresponding representation coefficients (i.e. that represents appropriate derivative at the same time t) are drawn for comparision, i.e. $x^{i,[p]}$ for $p = 8$, $x^{2\cdot i,[p]}$ for $p = 16$ and $x^{4\cdot i,[p]}$ for $p = 32$. Each bar is a diameter of the representation coefficient after p steps of iteration. The tests used are: 1c, 4, 5 (black, white, gray respectively). For all integrations the system (**??**) and doubleton Lohner set representation were used. The data is stored the files `periodic_08_07_out_3/rect_di_p.txt`, `periodic_16_07_out/rect_di_p.txt` and `periodic_32_07_out/rect_di_p.txt` respectively.

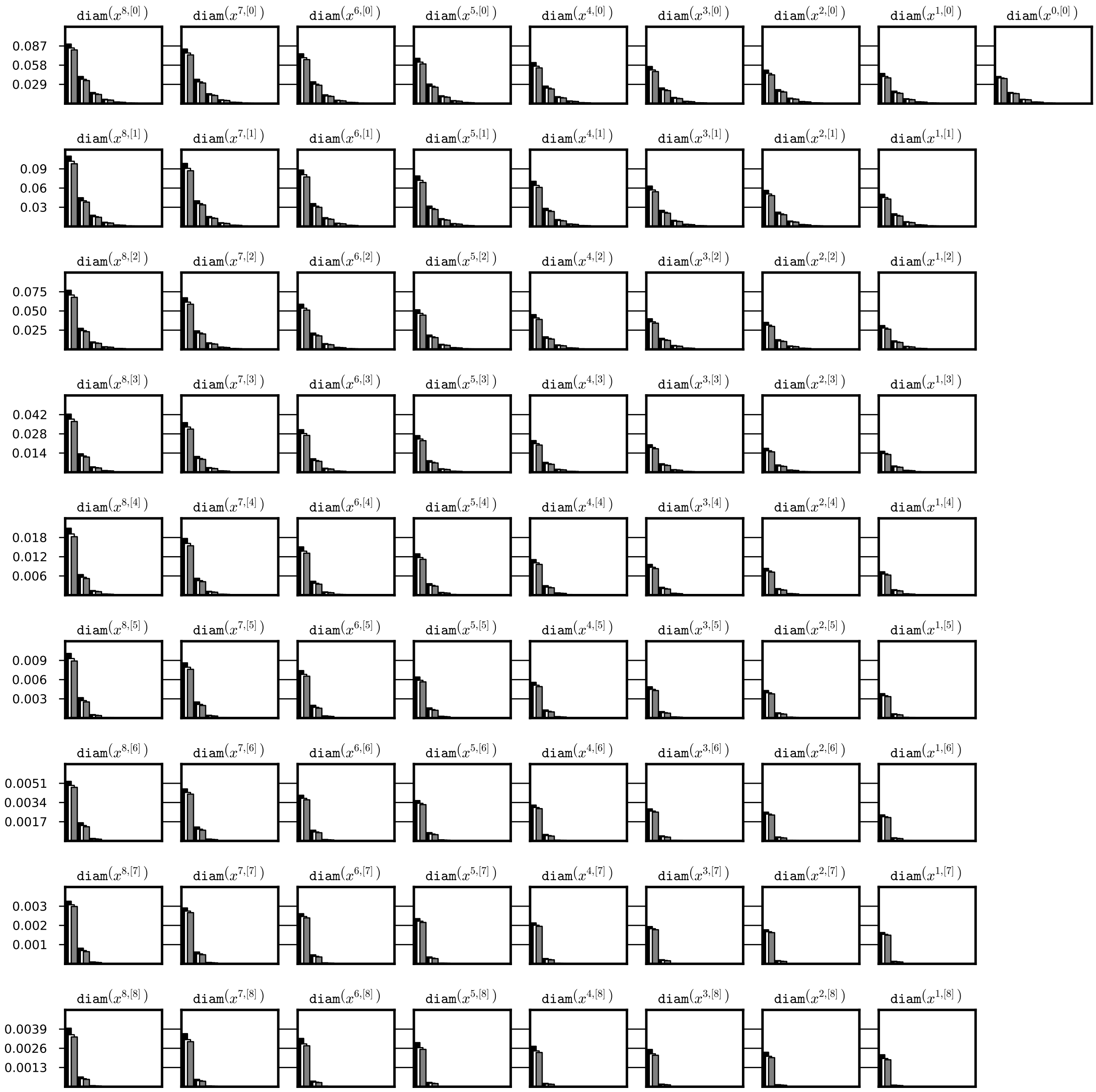

Figure 51: Dependence of the diameter of the representation on the grid size p. A history of one integration of three representations of a stable stationary solution $x \equiv 0$ for system (**??**) for parameter $p \in \{8, 16, 32\}$ was recorded every p steps after initial $2 \cdot p$ steps (black, white, gray respectively). The diameters of corresponding representation coefficients (i.e. that represents appropriate derivative at the same time t) are drawn for comparision, i.e. $x^{i,[p]}$ for $p = 8$, $x^{2 \cdot i,[p]}$ for $p = 16$ and $x^{4 \cdot i,[p]}$ for $p = 32$. Each bar is a diameter of the representation coefficient after p steps of iteration. The tests used are: 1c, 4, 5 (black, white, gray respectively). For all integrations the system (**??**) and doubleton Lohner set representation were used. The data is stored the files `steady_08_07_out_3/rect_di_p.txt`, `steady_16_07_out/rect_di_p.txt` and `steady_32_07_out/rect_di_p.txt` respectively.