EasyDyn Problem: Composed pendulum

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1 Description of the system

The considered system is represented in figure 1 and consist of five bars. Each body has a lenght of $1\,m$ and a mass of $1\,kg$. Body 1 is attached to the ground by a revolute joint of horizontal axis. Bodies 1, 2 and 3 are attached all together by the same revolute joint. Bodies 4 and 5 are attached respectively to bodies 2 and 3 by another revolute joints. Initial conditions are given on the figure.

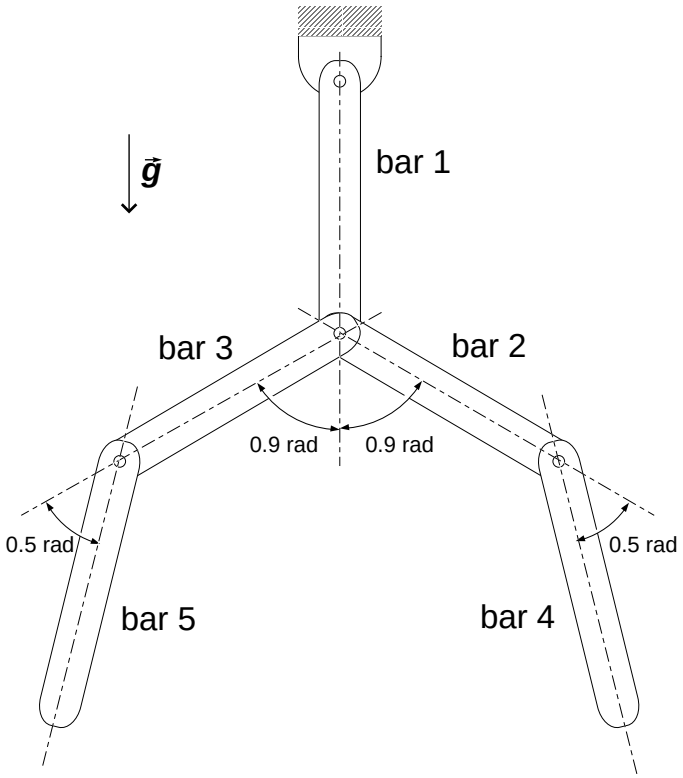

FIG. 1 – Composed pendulum with five bars

2 Requested results

The system is of course symmetrical. So it is asked to verify by simulation that the results are symmetrical.

3 Typical results

Figure 2 to figure 4 show the expected behaviour.

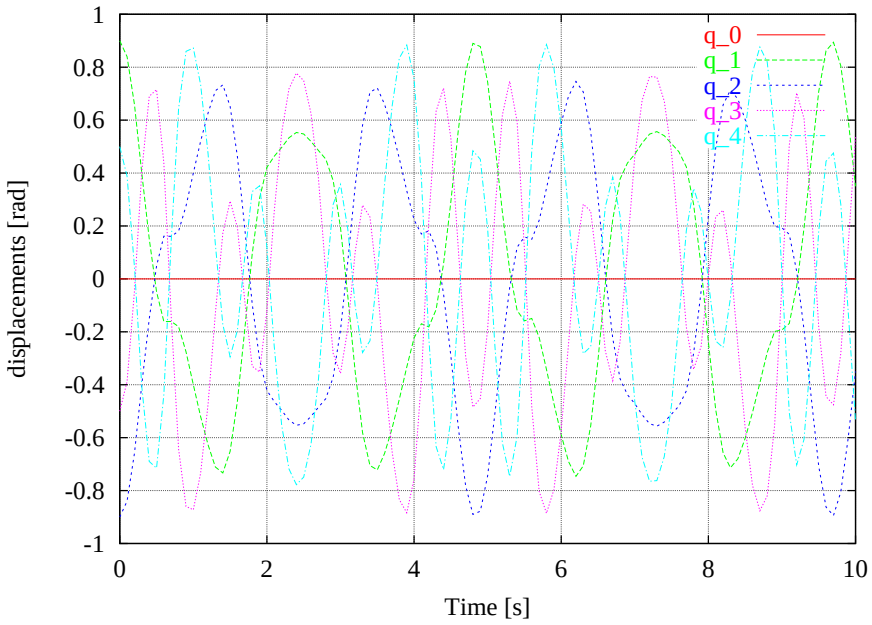

FIG. 2 – Evolution of configuration parameters

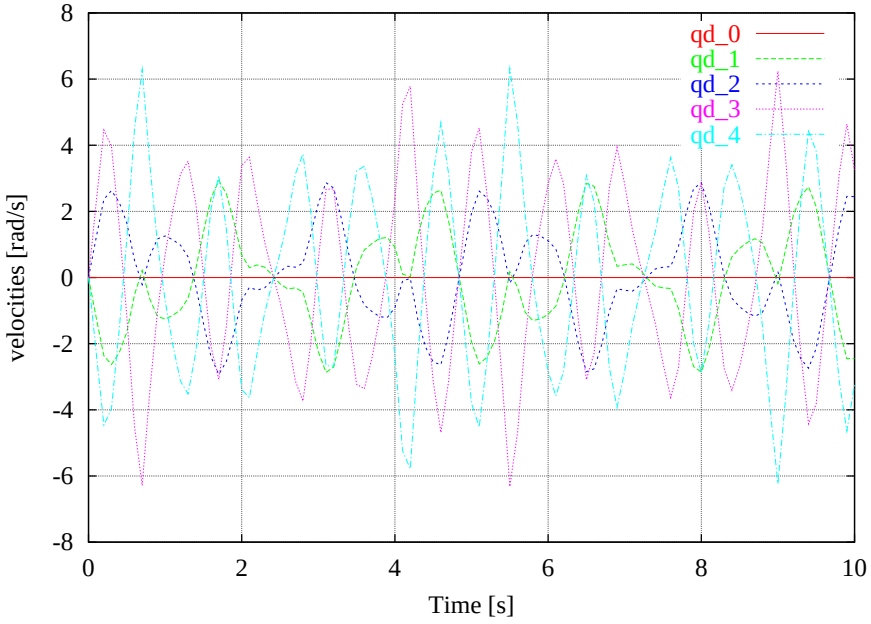

FIG. 3 – Evolution of first time derivatives of configuration parameters

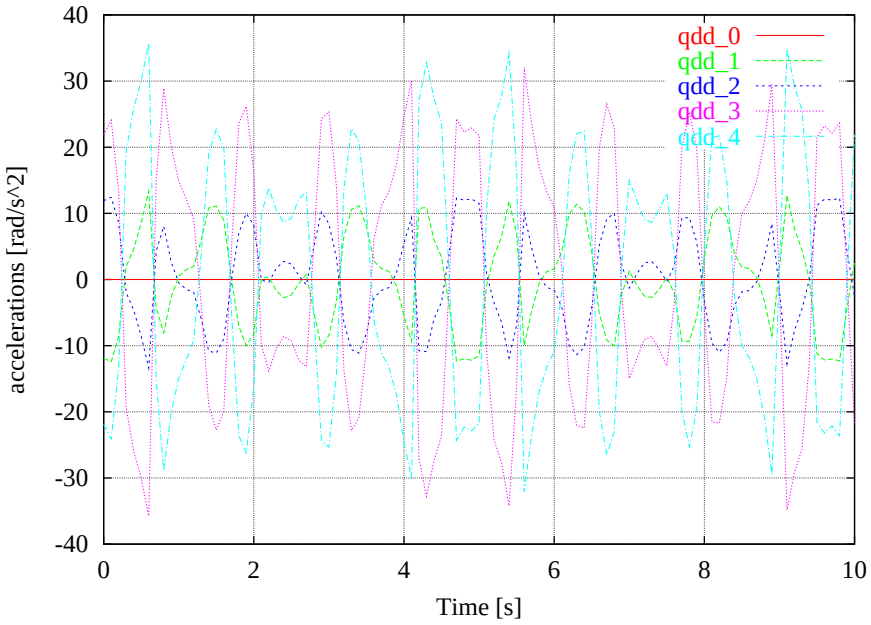

FIG. 4 – Evolution of second time derivatives of configuration parameters