Educational Session: proposal by Josef Böhm, Austria

Dynamic Systems – Presented Dynamically

One can find dynamic systems and modelling of dynamic systems in almost all upper secondary school curricula. Population interactions (e.g. Predator-Prey), economic models (e.g. Supply-Demand), ecological models (e.g. Carbon flow) are only a small selection of possible problems.

Most of them can be modelled by systems of difference equations or by systems of differential equations. It might be nice to find a solution for one special set of parameters but real investigation for fix points, attractors, etc. can be done visually by changing the parameters in an easy way.

In order to have a dynamic presentation we can use sliders and we can drag the initial points of the models.

Several tools are used (GeoGebra, TI-Nspire, WIRIS, DERIVE and VENSIM-PLE).