

Exponential stability of a linearised pde implies local exponential stability?

Hans Zwart (University of Twente)

For ordinary differential equations (odes) it is well-known that that if the linearised equation is exponentially stable, then the non-linear ode is locally exponentially stable. For partial differential equations (pdes) a similar result is known for decades. However, it only holds under additional assumptions on the equation. By means of simple examples we show that these conditions are necessary, i.e., counter example can be constructed when these conditions dont hold.