

Ghost of departed quantities in piecewise smooth dynamics

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Abstract

We all take switching for granted, whether it involves flipping between different rules in dynamical models, alternating between methods or domains in calculating and simulating models, or just the everyday decisions and changes going on around us. It is tempting to assume that a switch is a sharp event, so abrupt that it has no internal processes that can affect large scale behaviour. As switches becomes more prevalent in dynamical modeling, we are realising that this isn't that case, and that it is time to bring back the hidden world inside abrupt transitions, to revive the ghosts of switching. I'll talk about the motivations, the methods, and some typical behaviours in an area of dynamical systems that is bursting with open problems.