1138-76-27 **David E Amundsen*** (dave@math.carleton.ca), School of Mathematics and Statistics, Carleton University, Ottawa, Ontario K1S 5B6, Canada. *Resonance in Bounded Media.*

Resonant phenomena in bounded domains can pose distinct challenges both from physical and mathematical standpoints. It is well known that resonant behaviour can arise in bounded domains under weak forcing, leading to significant amplifications in the response. Canonical examples include acoustic resonance in open and closed tubes and other geometries. Exactly how this resonant behaviour manifests itself depends crucially on the underlying features of the system –i.e. is it continuous, is it shocked etc. In order to gain a better understanding of this process and the underlying mathematical features which drive the outcomes, we will present and discuss a simple class of nonlinear PDE model systems. Through continuous variation of the system structure and parameters key features, such as the commensurate or incommensurate nature of the underlying linear spectrum, emerge. These are then studied in more detail both from an analytical and numerical perspective. Of particular interest will be the description and characterization of the transition between various response regimes.

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