

Long-time behaviour of generalised gradient flows via occupational measures

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This talk will discuss new methods to study the long time behaviour of the generalised gradient flow (GGF) of a solution, u , of the critical equation for mechanical systems on the d -dimensional flat torus. For this, it is necessary to look at the critical set of u , which turns out to be an attractor for the flow. Moreover, a refined analysis will allow to establish whether GGF approaches regular or singular critical points as t goes to infinity. One crucial tool for this approach is provided by limiting occupational measures, a family of measures that are GGF-invariant (see [1]).

- [1] Z. Artstein. Invariant measures of differential inclusions applied to singular perturbations. *J. Differential Equations*, 152(2): 289-307, 1999