Geometric Flows

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Resumo/Abstract:
In this series of lectures we will discuss several aspects of classical evolutions by mean curvature flow. More precisely,

Lecture 1: we will discuss the definitions of geometric flow and mean curvature flow. We include a proof of short time existence.

Lecture 2: we will prove the maximum and comparison principles in this context and discuss some standard applications (including uniqueness and finite time singularity formation).

Lecture 3: this lecture will be devoted to the study of singularity formation. We start by discussing results on curve shortening flow. Then we will prove Huisken's monotonicity formula and its implications in the singularity formation.

Lecture 4: we will finish the series of lectures by studying results on non-compact evolutions and some open problems.