

Title: Mean curvature flow and self similar solutions

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Topics: Laplace and heat equations, minimal surfaces, existence and regularity of mean curvature flows, monotonicity formula, shrinkers (entire graphical case, curve case, mean convex case, rotational case, Lagrangian case in Euclidean and pseudo-Euclidean spaces), translators, rotators.

Lecture notes will be provided.

Reference:

T. Colding-W.Minicozzi, Minimal surfaces and mean curvature flow. Surveys in geometric analysis and relativity, 73–143, Adv. Lect. Math. (ALM), 20, Int. Press, Somerville, MA, 2011.

K. Ecker, Regularity theory for mean curvature flow. Progress in Nonlinear Differential Equations and their Applications, 57. Birkhäuser Boston, Inc., Boston, MA, 2004.

Prerequisite: good handling of multi-variable calculus.

Time: Fall 2014, MW 2:30–3:50 DEN 217