Topological methods of solving differential equations

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007 Kemeny Hall, 4:00 pm
(Tea 3:30 pm 300 Kemeny Hall)

Abstract

Early results by Smale, Hirsh, Nash and others prompted Gromov to introduce and develop the so-called h-principle, which is a topological method of solving differential equations and, more generally, differential relations. I will give an elementary exposition of ideas behind the h-principle.

I will also propose a b-principle which is a homology version of the h-principle. In comparison to the h-principle, b-principle gives less information about solutions of differential relations, but on the other hand, it is considerably easier from the point of view of computations.

This talk should be accessible to graduate students.