

Controlled flow of geometric maps

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In collaboration with J.-M. Coron and J. Krieger, we have recently initiated a study on the controlled dynamics of geometric evolution equations, focusing in particular on wave maps and heat maps. By introducing localized control forces into these systems, we explore fundamental questions of global controllability and stabilization. Our approach highlights the rich interplay between geometric analysis, partial differential equations, and control theory. Remarkably, due to the intrinsic geometric structure of the problem, we establish fast global controllability between homotopic steady states. This contrasts with the longstanding open problem concerning analogous questions for nonlinear heat equations.

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