Analytical obstructions to the weak approximation of Sobolev mappings into manifolds

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In a striking contrast with the situation for classical linear spaces, it is known that smooth maps need not be dense in Sobolev spaces of mappings into a compact manifold. While situations where strong density of smooth mappings occurs are completely characterized since the seminal work of F. Bethuel (1991) and its subsequent generalizations, the weak approximation problem remains widely open. In this talk, I will explain the history of these density questions in Sobolev spaces of mappings, having as a motivation and final goal a recent result obtained with Jean Van Schaftingen (IRMP, UCLouvain), featuring a new construction to produce analytical obstructions to the weak approximation property of Sobolev mappings.

More information at: `https://mat.uab.cat/web/seminarianalisi/`