

## Regularity for solutions of H-systems and $n$ -harmonic maps with $n/2$ square integrable derivatives

Over 30 years ago Frédéric Hélein proved that all harmonic maps from surfaces into compact Riemannian manifolds are smooth. Despite the existence of several partial results, for  $n > 2$  the counterpart of this theorem is wide open. In a recent work with two coauthors, Michał Miśkiewicz and Bogdan Petraszcuk, we prove regularity of  $n$ -harmonic maps into compact Riemannian manifolds and weak solutions to  $H$ -systems in dimension  $n$ , under an extra assumption: that  $n/2$ -th derivatives of the solution are square integrable. The tools used in the proof involve, as one might guess, Hardy spaces and BMO, and the Rivière–Uhlenbeck decomposition (with estimates in Morrey spaces). A particularly prominent role is played by the Coifman–Rochberg–Weiss commutator theorem.

**Auteur principal:** Prof. STRZELECKI, Pawel (University of Warsaw)

**Orateur:** Prof. STRZELECKI, Pawel (University of Warsaw)