NONSTANDARD CRITICAL POINT THEORY

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Existence of critical points of functionals defined on Banach spaces often results from Mountain Pass theorems. These are so called because the critical values are obtained as minima of maxima of the functional over paths which connect points through a "ridge".

The main ingredient behind the Theorems are very technical Deformation Lemmas which permit to lower the maxima by deforming the path near non-critical points (i.e., points where the derivative is not infinitesimal).

We shall survey some attempts at dispensing with Deformation Lemmas by means of nonstandard procedures.

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