Poster presentation: Closed A-p Quasiconvexity & Extended Real-Valued Integrands

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We showcase the results of a recent project carried out by the author under the supervision of Prof. Jan Kristensen. The work identifies the lower semicontinuous envelope of relaxation of a variational problem under a first-order differential constraint. The main novelty is that we allow the integrands to take the value $+\infty$, in particular we do not impose any upper growth bounds. To achieve this result we generalise the notion of \mathcal{A} -quasiconvexity and introduce, what we call, closed \mathcal{A} -p quasiconvexity, analogous to closed $W^{1,p}$ quasiconvexity. The principal tool we use is the theory of Young measures and we make extensive use of the classical measurable selection theorem by Kuratowski and Ryll-Nardzewski.