MAFIA - the seminar you can't refuse

On Morrey's inequality in fractional Sobolev spaces

Firoj Sk

Carl von Ossietzky Universität Oldenburg

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12:00–13:00
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Fakulta jaderná a fyzikálně inženýrská ČVUT
Trojanova 13, 12000 Praha

Abstract: We study the sharp constant in Morrey's inequality for fractional Sobolev spaces on the entire Euclidean space of dimension N, when $0 < s < 1$ and $p > 1$ are such that $sp > N$. In a series of recent articles by Hynd and Seuffert, we discuss the existence of the Morrrey extremals together with some regularity results. We analyse the sharp asymptotic behaviour of the Morrey constant in the following cases:

i) when N, p are fixed with $N < p$, and s goes to N/p,

ii) when s, N are fixed, and p tends to infinity,

iii) when N, p are fixed with $N < p$, and s goes to 1.

We further demonstrate the convergence of extremals as s goes to 1, which ensures the consistency of the well-known local results by Hynd and Seuffert. This talk is based on joint works with L. Brasco and F. Prinari.