ABOUT OPTIMAL TRANSPORT, PDES AND ALESSIO FIGALLIS FIELDS MEDAL IN 2018

JEAN VAN SCHAFTINGEN

Abstract:
Alessio Figalli (ETH Zürich) was awarded in August 2018 the Fields Medal "for contributions to the theory of optimal transport and its applications in partial differential equations, metric geometry and probability". He has proved regularity results for the MongeKantorovich optimal transport, in which one tries to minimize cost of deplacing some mass, for the related fully non-linear MongeAmpère partial differential equation and for free boundaries of obstacle problems. He has obtained quantitative isoperimetric inequalities through which the gap from optimality in geometric inequalities can be used to bound the distance to an optimizer for the same geometric inequality.