

On stochastic homogenisation of integral functionals and differential operators

Piotr Wozniak

(FU Berlin)

In this talk we look into a stochastic homogenisation result for integral functionals which, in the deformation variable, depend on a linear differential operator of order one. Assuming stationarity of the random integrands in conjunction with the Hörmander ellipticity condition on the operator, we show existence of a homogenised random integral functional. With the aid of Akcloglu-Krengel's ergodicity theorem we further characterise the limiting integrand in terms of an asymptotic cell formula. This result extends the classical qualitative result of Dal Maso and Modica for the full gradient case.