1145-49-657   **Filippo Cagnetti*** (`f.cagnetti@sussex.ac.uk`). *Stochastic Homogenisation of Free-Discontinuity Problems.*

Free-discontinuity problems were introduced by Ennio De Giorgi and Luigi Ambrosio in 1988. These are variational problems where the energy to be minimised involves both volume and surface terms. The expression "Free-Discontinuity" refers to the fact that the set where the surface energy is concentrated is not a priori fixed, and can be described as the discontinuity set of a function. We will discuss the stochastic homogenisation of free-discontinuity functionals. Assuming stationarity for the random volume and surface integrands, we prove the existence of a homogenised functional, whose volume and surface integrands are characterised by asymptotic formulas involving minimisation problems on larger and larger cubes with special boundary conditions. In the proof we combine a recent deterministic Gamma-convergence result for free-discontinuity functionals with the Subadditive Ergodic Theorem by Akcoglu and Krengel. This is a joint work in collaboration with Gianni Dal Maso (SISSA), Lucia Scardia (Heriot-Watt University), and Caterina Zeppieri (University of Münster). (Received September 12, 2018)