1129-20-515 **Maxim Zyskin*** (maxim.zyskin@nottingham.ac.uk), School of Mathematical Sciences, University of Nottingham, Nottingham, NG7 2QL, United Kingdom. *Transformation groups and discrete structures in continuum description of defective crystals.*

Davini description of elasticity and plasticity of defective crystal involves a frame of continuum 'lattice vector' fields, and dislocation density matrix, capturing the structure constants of the Lie bracket of those vector fields. Those fields together describe kinematics of a defective crystal, allowing for elastic and certain plastic deformations. A truncation assumption for the energy functional leads to consider finite dimensional Lie algebras of 'lattice vector' fields and corresponding transformation groups. In low spatial dimensions, such groups may be classified. Discrete crystal structures emerge in such context as discrete subgroups of the corresponding Lie groups. This approach includes the usual crystal lattices as a particular case. I will present computational approach to determine, up to an equivalence, 'lattice vector fields' of 2 dimensional defective crystals corresponding to 3 dimensional Lie algebras, and discrete subgroups for those. In the nilpotent case, lattice vector fields and discrete structures were presented in our recent paper http://rdcu.be/nD07 (Received March 21, 2017)