

**Adil Mughal (Aberystwyth University):
Peierls-Nabarro potential for a confined chain of
hard spheres under compression**

Monday 19 February 2024 16:00 (30 minutes)

Examples of bifurcation diagrams are presented for a chain of hard spheres under compression, which are confined by a transverse potential. The diagrams are modified in the presence of an axial force and show interesting topological rearrangements due to the reconnection of loci of different equilibrium solutions. The corresponding Peierls-Nabarro potential is defined and calculated for various values of compression. This relatively tractable and transparent system can illustrate in detail the general features of such a potential and its relation to experiment.