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The elasticity of magnetic chains: From self-buckling to self-assembly DOMINIC VELLA, EMMANUEL DU PONTAVICE, CAMERON HALL, ALAIN GORIELY, OCCAM, University of Oxford — Spherical neodymium magnets have become a popular toy in recent years. In this talk, we present the results of some experimental and theoretical investigations into the peculiar elastic-like behaviour exhibited by chains of these magnetic spheres. We show how the dipole-dipole interactions between spheres penalise deformation, and we find that the form of this penalty is different for a long chain compared to a short chain. Finally, we investigate the dynamic self-assembly of these chains into cylindrical structures.

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