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Partially directed walks and polymer adsorption on striped surfaces

Polymers can adsorb on striped surfaces and then be pulled off the surface by the application of a tensile force. Because of the stripes there is a strong dependence on the direction in which the force is applied. The polymer can be modelled as a partially directed walk in three dimensions interacting with a (striped) impenetrable plane and the model can be solved completely at the level of generating functions. The long polymer behaviour can be extracted from the singularity structure of the generating functions.

This is joint work with Gary Iliev and Enzo Orlandini.