



School of Physical Sciences  
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# On the Lorenz Flow and the Modular Flow

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**Date:** March 20, 2017 (Monday)  
**Time:** 16:00 hrs (4:00 pm)  
**Venue:** Seminar Room  
First Floor, SPS, JNU

I will describe a new approach to chaotic flows in dimension three, using knot theory. I will use this to show that one can get rid of the singularities in the famous Lorenz flow on  $\mathbf{R}^3$ , and obtain a flow on a trefoil knot complement. The flow can then be related to the geodesic flow on the modular surface. When changing the parameters, we find other knots for the Lorenz system and so this uncovers certain topological phases in the Lorenz system.