TIFR Centre for Interdisciplinary Sciences
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Colloquium

Edwards, Gibbs and Granular Entropy

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In 1989, Edwards proposed that the properties of granular media could be interpreted by using an analogy between the statistical mechanical entropy of Boltzmann and Gibbs, and a granular entropy defined as the logarithm of the number of distinct packings of N granular particles in a fixed volume V. The proposal was rather controversial but much of the debate was sterile because the granular entropy could not be computed for systems containing more than 16 particles – hardly a good approximation of the thermodynamic limit.

In my talk I will describe how granular entropies of much larger systems can be computed. Interestingly, it turns out the definition of granular entropy will have to be modified to guarantee that granular entropy is extensive – something that Gibbs knew all along.

Friday, August 22nd 2014

2:00 PM (Tea/Coffee at 1:45 PM)

Seminar Hall, TCIS