Contribution ID: **1** Type: **Scheduled Talks**

Continuous Symmetries and the Arboreal Gas

Monday, July 28, 2025 9:20 AM (1 hour)

I will begin by reviewing (some of) what is known and conjectured about $O(N)$ spin models. This is meant to motivate the study of the arboreal gas, a combinatorial probability model of random forests. Surprisingly, the arboreal gas has a hidden continuous symmetry similar to that of an $O(N)$ model. As a consequence one expects it to behave similarly. This turns out to be correct: several important rigorous results for $O(N)$ spin models have been shown to hold for the arboreal gas. The combinatorial nature of the arboreal gas suggests it may be a simpler setting than the $O(N)$ models for investigating open conjectures.

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