Automatic Geometric Symmetry Detection

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1 Problem Statement

Consider a system of of N arbitrary particles with $r_i \in \mathbb{R}^p$ and $y_i \in \mathbb{N}$ where $i = 1 : N$ as the positions and labels respectively. We design a learning algorithm that identifies the geometric symmetries in p dimensions of the particle configuration. Further, the effect of noise on our algorithm is examined and improvements to its robustness are suggested.

2 Literature review

2.1 Geometric Deep Learning