

Mathematics and Its Link to Statistical Mechanics

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Mathematics represents a bridge between many fields of science, including particle physics and statistical mechanics. These relationships confirm the important role of mathematics in being able to solve problems (situations) in daily life.

One of the objectives of my work is to answer the question: What is the purpose of mathematics? In this work, I present a mathematical (combinatorial) model describing specific physical models (situations) of interaction between particles derived from statistical mechanics. In this presentation, I am interested in the study of imperfect gases. This research is applicable to many fields of science (particle physics, statistical mechanics, combinatorics, graph theory, experimental mathematics, etc.).