



Canadian Association  
of Physicists

Association canadienne  
des physiciens et physiciennes

Contribution ID: 3957 Type: **Poster Competition (Graduate Student) / Compétition affiches (Étudiant(e) 2e ou 3e cycle)**

## **(G\*) (POS-10) Ising-like model on black hole space**

*Tuesday 20 June 2023 17:38 (2 minutes)*

It is known that Schwarzschild geometry exhibits thermodynamic properties and these have a statistical mechanics explanation. An interesting question to ask is if we can study the statistical mechanics of spins on this background. In this presentation we will answer this question in the positive and construct an Ising-like model on black hole space. Then we will numerically study the thermodynamic properties of spins (such as alignment and entropy) for different masses of the black hole and discuss the resultant second order phase transition.

### **Keyword-1**

Ising-like model

### **Keyword-2**

Black hole space

### **Keyword-3**

Phase transition

**Authors:** SAEED, Mustafa; Dr HUSAIN, Viqar (University of New Brunswick)

**Presenter:** SAEED, Mustafa

**Session Classification:** DTP Poster Session & Student Poster Competition (4) | Session d'affiches DPT et concours d'affiches étudiantes (4)

**Track Classification:** Technical Sessions / Sessions techniques: Theoretical Physics / Physique théorique (DTP-DPT)