

# SAIP2013



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## **Shedding light on the invisible - Radio signals from Dark Matter**

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### **Abstract :**

Dark matter is everywhere, but is elusive to any direct or indirect probe. We thus explore new astrophysical methods for indirect dark matter detection. Annihilation of dark matter particles produces emission signals that populate the whole electromagnetic spectrum, from radio to gamma-rays. In particular, we consider diffuse radio emission probes from dwarf spheroidal galaxies such as the Carina dwarf galaxy. Investigation of these emissions allows us to place strong limits on the mass of the dark matter particles and the velocity averaged annihilation rate and possibly arrive at a positive detection in the near future.

### **Award :**

Yes

### **Level :**

MSc

### **Supervisor :**

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### **Paper :**

No

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