



Contribution ID: 114

Type: **Oral Presentation**

Ferromagnetic neutron stars

Thursday, 14 July 2011 08:45 (15 minutes)

<p>It is well known that neutron stars have very strong magnetic fields and that these fields impact the behaviour of the star. The focus of our research is on the interaction between the magnetic field and the constituent matter in the neutron star's interior. In particular we investigate the possibility of a ferromagnetic phase in the neutron star interior being the source of the star's ultra-strong magnetic field. Considering such a phase provides us with a feedback mechanism between the constituent matter and the magnetic field and vice versa, which we believe is a necessary component in understanding the evolution of the neutron star's magnetic field. In this talk we will shortly introduce a description of ferromagnetism in the neutron star interior. We will also discuss the impact of such a phase as well as allude to possible observational consequences.

**Level (Hons, MSc,
 PhD, other)?**

PhD

**Consider for a student
 award (Yes / No)?**

Yes

**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

Yes

Primary author: Mr DIENER, Jacobus (Stellenbosch University)

Co-author: Prof. SCHOLTZ, Frederick (Stellenbosch University)

Presenter: Mr DIENER, Jacobus (Stellenbosch University)

Session Classification: APSS

Track Classification: Track D1 - Astrophysics