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## The contribution of photons from the circumstellar disc to gamma-gamma absorption in PSR B1259-63

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**Abstract content** **&nbsp;** (Max 300 words) **<br>** **<a href="http://events.saip.org.za/getFile.py/?target="\_blank">Formatting &** **<br>** **Special chars</a>**

The gamma-ray binary system PSR B1259-63, consists of a Be star and a pulsar, and is one of only a few known systems where their spectral energy distribution peaks in the gamma-ray regime. It is also the only gamma-ray binary where the nature of the compact object is known. Near periastron, the pulsar passes through the circumstellar disc that surrounds the Be star companion. Observations around periastron show a local minimum in the TeV gamma-ray flux at periastron, when the seed photon energy density, and hence the inverse Compton flux, should be highest. This may be explained through gamma-gamma absorption. Here we show that the contribution of the photons from the circumstellar disc surrounding the Be star significantly modifies the gamma-gamma absorption and may be sufficient to explain the very high energy light curve.

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**Level for award** **<br>** **&nbsp;** **(Hons, MSc, <br>** **&nbsp;** **PhD, N/A)?**

NA

**Main supervisor (name and email)** **<br>** **and his / her institution**

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Yes

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