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Tsallis entropy and quantum uncertainty in information measurement

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Abstract content
   (Max 300 words)

The Tsallis entropy defines an important generalization of the usual concept of entropy which depends on parameter α. Our goal is to establish a connection between the quantum uncertainty principle and the Tsallis entropy for single discrete observables. In particular, we show that there exist a generalized uncertainty bound reached in order to appropriately express the quantum uncertainty principle in terms of the Tsallis entropy. This kind of connection forms an initial important step towards finding an important application of this α-entropy in the area of quantum communication particularly in quantum key distribution for which they have not been extensively investigated.

Apply to be
 considered for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD)?

PhD

Main supervisor (name and email)
and his / her institution

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Would you like to <br> submit a short paper <br> for the Conference
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Yes

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