

From Interstellar Ices to PAHs

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INVITED TALK

Shape and size of astronomical PAHs: insight from modelling and observations

Alessandra Candian¹

¹ Leiden Observatory, Leiden University, Niels Bohrweg 2, 2333CA, Leiden, The Netherlands

E-mail: candian@strw.leidenuniv.nl

Polycyclic Aromatic Hydrocarbon (PAH) molecules constitute a rich and diverse chemical family, both in terms of size and shape. How much of this richness is preserved in astronomical environments? Can we gain some insight analysing the subtle variations of the PAH bands profile and strength? In this talk I will present some recent efforts in this direction, showing the importance of the interplay between experiment, model and observations. Specifically, I will show clear evidences for the presence of a population of non-compact, bay-containing PAHs in the Red Rectangle [1] which can be explained in terms of bottom-up process in which the PAH structure grows by addition of rings. Bay-containing PAHs are present also in other galactic environments [2,3], where photodissociation drives the changes in the PAH shape distribution. Finally, I will illustrate how a detailed PAH emission model can help shedding light on the size distribution of interstellar PAH molecules [4,5].

REFERENCES

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