



ROUND TABLE I

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MODELS OF INTERSTELLAR MEDIA

The Milky Way & external galaxies

- How can we apply models of the Galactic ISM to other galaxies? What are the limitations?
- How peculiar is the ISM of the Milky Way? What are the ISM invariants?

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A matter of viewpoint

- Could it be possible that the way we are modeling interstellar media is limited because it is an ill-posed problem, biased by the observables we are getting?
- Could we be looking at our problems the wrong way?

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Model complexity

- Is the comparison of different models useful to validate them? Or is it essentially a way of estimating their systematic uncertainties?
- Are the epistemic opacity of ISM models (*i.e.* their black-boxiness) and their unjustified sophistication an obstacle? Should we adapt the degree of complexity of our models to the quantity we want to derive?

THE GEEKY STUFF

Job evolution

- What is the future of model development in astrophysics? All of you have a craftsman approach: you develop your codes, either by yourself or with someone else.
- ⇒ With the natural increase in complexity, do you think this approach will be viable in the future, or will the next generation have to work in an industrial way, *i.e.* developing only pieces of a model as part of a larger team?

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Technological feedback

Do computing languages and machine architectures affect the physical ingredients you put in your models?

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Artificial intelligence

Will machine-learning stay confined to the comparison between models and observations, or could it also help computing models? Will ChatGPT's cub write your code?

META-ASTROPHYSICS

Prospectives

- How do you see your field in 20 years from now? Obviously, we do not know what will be the answers, but what are the open questions you think will have been answered?
- What do you expect from future instruments?

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More money

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Unicity

What makes ISM studies unique?

BONUS

Bridging the gap with the distant Universe

- What information is missing to extrapolate our knowledge of the nearby galaxies to the distant Universe?
- How can we compensate the lack of angular resolution?

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Bridging the gap with very distant topics

- We are in an oceanology laboratory. People who work here also study hydrodynamics and the impact of the radiation from a star, the Sun. More generally, are you aware of any technics, methods or concepts that are developed in Earth sciences and that are used in ISMology?
- And reversely, do you know if the study of the ISM has ever had an impact on climate science?

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The question that Patrice wanted to ask

Are there industrial applications of your work?