# Not so smooth after all: resolving dust and gas structures in protoplanetary disks

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## Propositions

accompanying the thesis

# Not so smooth after all: resolving dust and gas structures in protoplanetary disks

1. The orbital plane of the GG Tau A binary is misaligned with respect to the circumbinary disk. (*Chapter 2*)

2. The spiral arms observed in scattered light may be triggered by massive vortices rather than by planets. This scenario can explain the structures observed in HD 135344B. (*Chapter 3, 4*)

3. CN emission is ring-shaped even in full disks, with its location unrelated to that of any dust ring. (*Chapter 4*)

4. There is no straightforward relation between the age of a star-forming region and mass of its disks. (*Chapter 5*)

5. Proper disk modelling and interpretation must account for observations at different wavelengths.

6. Machine learning is a critical tool for today's astronomy, and most astronomers are already using it without knowing.

7. Science is more about being able to ask questions than having the skills to answer them.

8. When dealing with chemical modelling, there is no such thing as a quick and easy paper.

9. The most interesting things in models are failures.

10. The most interesting things in life are unexpected events.

11. Science enriches our vision of the world and opens our eyes to even more beauty: cuisine is a clear example of this.

12. Good food is the most powerful unifying tool for people.

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