Diagnostics for mechanical heating in star-forming galaxies

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Propositions accompanying the thesis

Diagnostics for Mechanical Heating in Star-forming Galaxies

1. Mechanical heating leaves a strong signature on the column densities of diagnostic molecular species. (Chapter 2)
2. The concept of mechanical heating is essential to understand the emission of star-forming galaxies. (Chapter 3)
3. High excitation temperatures of molecular line emission in star-forming galaxies are strongly correlated with mechanical heating. (Chapter 4)
4. Consideration of high-*J* transitions of molecular line emission lines is essential to constrain the mechanical heating rate. (Chapter 4)
5. The gas density probability density function in star-forming galaxies can be constrained using the line emission of high density tracers. (Chapter 5)
6. A universal benchmark for chemical modeling is urgently needed for future progress in the field of mm and submm astronomy.
7. Machine learning and data-mining are essential tools to develop new theories in astrophysics.
8. Time dependent simulations that include chemical modeling and radiative transfer are helpful both in academia and industry.
9. Each science faculty must have a full-time software engineer dedicated to help graduate students write better programs.
10. Everything we see has already occurred.
11. There are more important things in life to complain about than the Dutch weather.
12. Animals are as sensitive as humans, sometimes even more.
13. The science of cooking is as intriguing as astronomy.

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