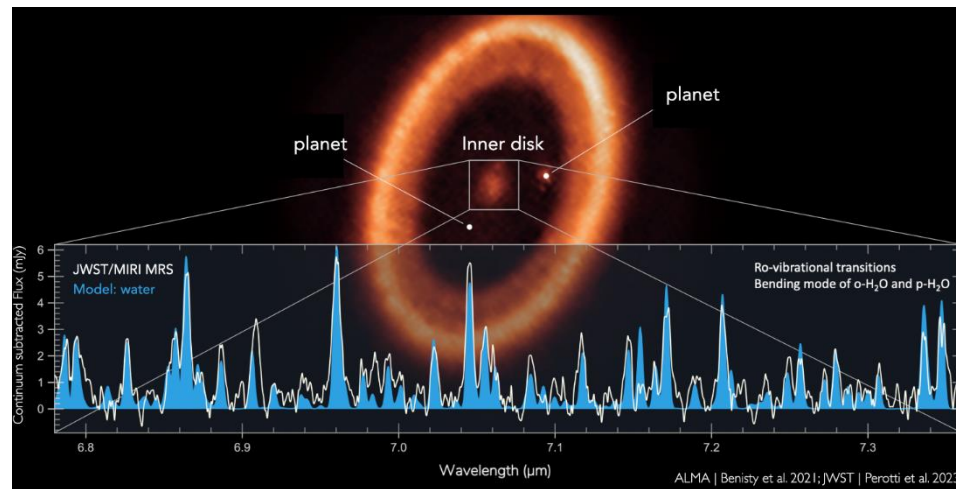


A sharper view: observations of planet-forming
disks with JWST

Dr. Giulia Perotti,

Max-Planck-Institut für Astronomie, (MPIA), Universität Heidelberg

<https://uni-due.zoom-x.de/j/64228670246?pwd=RjVQeFNIUkRKRkpiNVpKYXhJaFNLdz09>

Over the past two years, the James Webb Space Telescope (JWST) has been surveying a large number of planet-forming disks with exquisite precision, providing the community with new insights into the physical and chemical structures of these objects. In this occasion, I will give an overview of recent findings from Cycle 1 JWST ERS and GTO programs Ice Age, JOYS, and MINDS. Compared to previous infrared facilities, JWST offers unprecedented sensitivity, spatial resolution ($R=3400-1600$), and spectral coverage ($0.6-28 \mu\text{m}$). These observations reveal a diverse chemistry in the ices, as well as in the gas of inner disk regions ($< 10 \text{ au}$). We find chemical pathways leading to complex ices in clouds and protostellar envelopes, while the distribution of CO ice in protoplanetary disks indicates that it is trapped in the CO₂ ice matrix on the dust grains.

These findings add a level of complexity in our understanding of how exoplanetary atmospheres relate to their formation histories.

