

Service d'Astrophysique
SÉMINAIRE

Jeudi 3 février 11h00

CEA Saclay, Orme des Merisiers Bât 709, salle 3 (Rdc)

**WHERE PLANETS FORM: THE DEAD ZONE IN
PROTOSTELLAR DISKS**

Neal TURNER

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The disks of gas and dust observed orbiting many young stars are surely the birthplaces of planets, and give dramatic confirmation of a picture of the origins of our solar system stretching back at least to Immanuel Kant. While telescopes in space and on the ground allow us to probe the disks' atmospheres and outer reaches, the growth of planets has not yet been directly observed, due to the great distances of even the nearest examples and the fact that the dust obscures our view. Under these constraints, modeling is crucial for our understanding. I will focus on what we can infer about the internal flows driven by magnetic forces. The stellar X-rays ionize the top and bottom surfaces of the disk, yielding magnetically-active turbulent layers sandwiching a poorly-conducting dead zone. This structure enables dust to remain suspended in the atmosphere, as required by observations of the scattered starlight, at the same time that solid material accumulates inside for assembly into planets.

Le cafe sera servi 10 minutes avant

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