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Understanding planet formation: looking at «teenage» giant planets (I)

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Observational constraints on planet formation mechanisms and corresponding timescales can be set through exoplanetary study by using two main approaches. (i) We can investigate relatively old stars hosting giant planets, and then inferring fundamental properties going reversely in time. (ii) On the other hand, a complementary and much more powerful approach consists in looking at planets during their formation stage, or just after: unfortunately and mainly due to technical limitations (lack of young stars nearby, observational biases related to the different techniques) only a handful of objects have been discovered.

The results collected so far seem to indicate that a comprehensive knowledge of the formation and evolution properties is still wanting. In this talk I will review the current status of the field involving observations of protoplanets (i.e., ages less than roughly 10 Myr) and discuss the current limitations related to the different observational techniques (direct and indirect). I will also discuss the impact that near and next future facilities (e.g., JWST, E-ELT) will have in this research field.

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Session Classification: Protoplanetary disks (chair R. Garcia Lopez)