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'c2d' Spitzer results on disk evolution and planet formation

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The Spitzer data, with their wavelength coverage, offer an exceptional tool for studying the status and evolution of the inner zones in the disks around young stars (1-30 AU), where planets eventually form. We present the results on disk evolution from the 'Cores to Disks' (c2d) Spitzer Legacy Program, which mapped five nearby star-forming regions from 3 to 70 microns and provides a large and magnitude-limited sample of 700 protoplanetary disks with ages < 10 Myr. This data set is analyzed with the use of a new two-dimensional classification scheme which provides information on the detailed structure of the inner disks, such as grain growth, dust settling, dust depletion and/or presence of gaps. A statistical description of the different types of disks and their corresponding time-scales is presented. Finally, the characteristics and incidence of the transitional disks (disks with inner gaps or holes with the size of the Solar System) in these observations is studied and compared statistically with the properties of the remaining disk sample in the same star-forming regions to search for conditions favorable for early inner disk evolution and efficient planet formation.