DISK EVOLUTION IN SERPENS AFTER C2D SPITZER MAPPING B. Merín, V.C. Geers, E.F. van Dishoeck, *Leiden Observatory, P.O. Box 9513, 2300 RA Leiden, The Netherlands (*merin@strw.leidenuniv.nl*)*, A.C.A. Boogert, K.M. Pontoppidan *Div. Physics, Math. & Astronomy, MS 105-24, CalTech, Pasadena, CA 91125 USA,* P. M. Harvey, J. Kessler-Silacci *Dept. Astronomy, Univ. Texas at Austin, 1 Univ. Sta. C1400, Austin, TX 78712-0259, USA*, J.-C. Augereau, *Laboratoire d'Astrophysique, Obs. de Grenoble, BP 53, F-38041 Grenoble, Cédex 9, France* and the c2d Team.

As part of the Cores to Disks (c*2d*) Spitzer Legacy mapping campaign of molecular clouds (Evans et al. 2003), we have surveyed a region of one square degree in the Serpens molecular cloud (*d* ~ 250 pc) that is very rich in young stars (see poster by Harvey et al.). The region contains ~ 150 young stars associated with strong infrared excess and luminosities ranging from 100 to 0.01 L_{sun}. The brightest young stars are primarily concentrated in 3 main clusters, but with a much more extended population of objects located in the northern section of the mapped region. The three clusters are located along a line extending southwards from the well-studied Serpens Core and show evidence of sequential star formation.

In order to characterize the newly discovered young stellar population in the cloud, we have traced the Spectral Energy Distributions (SEDs) using 2MASS, IRAC and MIPS bands of all the young objects across the cloud. The characterization of the stellar continua was done by fitting the SEDs to NextGen synthetic stellar models. The disk IR excess emission was characterized using a new approach to account for the large variety of SEDs observed, namely, the construction of histograms of relative flux excess in all of the IRAC and MIPS bands for complete stellar populations. This method helps describing both objects which fall well in one of the categories of the Lada et al. classification scheme (with the slope of the IR SED) and those other objects which escape that scheme having e.g. inner holes in their disks or other kinds of excesses.

The comparison of the excess flux histograms for equivalent populations in terms of stellar mass and luminosity across the cloud has shown that there is a systematic difference in the SEDs observed in the north and in the south of the cloud. In particular, we observe that the SEDs of the young stars in the north are statistically more similar to the median SED of the Classical TTauri stars (CTTS) while those of the southern stars have a large variety of excesses, from stars without any substantial excess in the IRAC bands to objects with larger excesses to those typical of CTTS.

In this contribution we try assess whether this difference is connected with the relative age difference between the northern (younger) stars and the southern (older) stars and therefore whether we are actually witnessing disk evolution in Serpens in a large range of evolutionary paths for different objects.

We also present detailed analysis of the SEDs and disk properties of some known young stars in the cloud (see poster by Pontoppidan et al. on VV Ser) and new objects observed with IRS by c2d in the context of the evolutionary scenario and explore the possible biases introduced in the result by the contamination of the sample with both old post-AGB stars or background galaxies.