1060-32-234 **Anne Pichon*** (pichon@iml.univ-mrs.fr), Institut de Mathématiques de Luminy, Case 907, Campus de Luminy, 13009 Marseille, France. *analytic link theory in a complex surface singularity link.*

This is a joint work with Andràs Neméthi and W. D Neumann.

Let M be the link of a complex normal surface singularity (X, p), i.e. the boundary of a small regular neighbourhood of p in X. In particular, M is a closed 3-manifold which can be given by a negative definite plumbing. An "analytic link" in M is defined as the intersection $f^{-1}(0) \cap M$, where $f : (X, p) \to (\mathbb{C}, 0)$ is a germ of holomorphic function on (X, p).

There may exist many different complex analytic structures on the cone $C(M)$, i.e., many analytically different normal surface singularities $(X, 0)$ whose links L_X are homeomorphic to M. The aim of this talk is to show how one can understand these different analytic structures from the point of view of the "analytic link theory" on M.

For the link M of a normal complex surface singularity $(X, 0)$ we ask when a knot $K \subset M$ exists for which the answer to whether K is the link of the zero set of some analytic germ $f : (X, 0) \to (\mathbb{C}, 0)$ affects the analytic structure on $(X, 0)$. We show that if M is an integral homology sphere then such a knot exists, outward three exceptional manifolds M. (Received March 30, 2010)