Braid monodromy invariants of plane algebraic curves

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Calendario: (il corso previsto per il periodo febbraio/aprile e' spostato a data da destinarsi)

Tipologia di esame: To be decided with participants.

Programma del corso:

1. Definitions of the braid group.
2. Braid monodromy of plane curve singularities.
3. Braid monodromy factorization of a plane algebraic curve.
4. Braid monodromy factorization semigroup and its properties.
5. The fundamental group of the complement of plane algebraic curve. Zariski - van Kampen theorem.
6. Alexander modules and Alexander polynomials of plane curves.
7. Computation of the first homology group of cyclic coverings of the projective plane.
8. Monodromy of the coverings of the projective plane.
9. Generic coverings of the projective plane.
10. Chisini's Conjecture on generic coverings of the plane.
11. Application to invariants of connected components of the moduli space of the projective algebraic surfaces.
12. Hurwitz curves as a generalization of the notion of plane algebraic curves and their application to symplectic four-manifolds.