Meeting: 998, Houston, Texas, SS 7A, Special Session on Low Dimensional Topology

998-57-330 **Leonardo Navarro Carvalho** and **Ulrich Oertel*** (oertel@andromeda.rutgers.edu), Dept. of Mathematics and Computer Science, Rutgers University, Newark, NJ 07102. *Automorphisms of 3-manifolds.* Preliminary report.

Earlier work of Oertel gives a classification up to isotopy of automorphisms (self-homeomorphisms) of 3-dimensional handlebodies and compression bodies. The most interesting automorphisms of handlebodies in the classification (analogous to pseudo-Anosovs) are those which are irreducible and non-periodic. For each such $f : H \to H$, there is a pair of invariant measured laminations (Ω, ν) (1-dimensional) and (Λ, μ) (2-dimensional), and a growth rate λ such that $f(\Lambda, \mu) = (\Lambda, \lambda\mu)$.

Carvalho has constructed examples of irreducible non-periodic automorphisms of handlebodies with various properties. For example, the induced automorphism on the fundamental group can be trivial. He also has results concerning invariant laminations with minimal growth rates.

Current work of Carvalho and Oertel concerns the classification (in the same spirit) of automorphisms of connected sums of handlebodies and $S^2 \times S^1$'s. The goal is a kind of classification of automorphisms of compact 3-manifolds (satisfying the Geometrization Conjecture). (Received March 01, 2004)