

Cellular A^1 -homology of smooth algebraic varieties over a field was introduced by "accident" by Anand Sawant and myself. It is an extremely simplified version of the notion of A^1 -homology and as opposed to the latter is very computable. For instance the cellular A^1 -homology of projective spaces is entirely computed, though the Suslin homology is not entirely known.

I will (quickly) introduce these objects, give examples, conjectures and show how they behave very closely to singular homology for differentiable manifolds, for instance as far as Poincare' duality is concerned.

If time allows, I will sketch how it might be used to (hope to) classify rational smooth projective varieties up to isomorphisms over a perfect field, in the lines of a "geometric topology" approach. This is based on joint work with Anand Sawant.