

# Whitney cellularisation and Goresky's homology conjecture

David Trotman<sup>1</sup>

<sup>1</sup> Aix-Marseille-University

In 1981 Mark Goresky conjectured that the homology of a Whitney stratified set can be represented by Whitney stratified cycles. More precisely he defined a Whitney homology theory using Whitney stratified chains and conjectured the bijection of the resulting homology groups with those of the usual homology. He proved such a bijection for cohomology, and in the special case of a Whitney stratified manifold proved the bijection for homology. We prove Goresky's conjecture by showing that every Whitney stratified set admits a refinement which is a Whitney regular cell decomposition. Our proof depends on results obtained in our recent proof of the smooth Whitney fibering conjecture (2016), in particular on a horizontally  $C^1$  improvement of the Thom-Mather isotopy theorem and the existence of a local Whitney regular wing structure in a neighbourhood of each stratum.

This is a joint work with Claudio Murolo.