

GROUP ACTIONS ON FILTERED MODULES AND FINITE DETERMINACY

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ABSTRACT. On many occasions a local object (e.g. the germ of a map at a point) is essentially determined (up to a group action) by its finite jet, i.e. its restriction onto some N 'th-infinitesimal neighborhood of the point.

This phenomenon is called 'the finite determinacy'. It has been studied extensively for the (formal/smooth/analytic) germs of maps. We extend the classical results to the broad class of rings (over a field of zero characteristic) and group actions. As an application we compute (or give tight bounds to) the orders of determinacy for numerous scenarios, e.g.: germs of maps, stalks of sheaves/modules over local rings, quadratic/skew-symmetric forms.

(joint work with G.Belitskii)