

On the sequential closure of quadratic modules

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We examine the sequential closure of a quadratic module M . It consists of all elements f for which there is some element q , such that $f + \epsilon q \in M$ for all $\epsilon > 0$. We give a sufficient condition for an element to belong to this sequential closure. The condition involves a family of "lower dimensional" quadratic modules, corresponding to fibres of bounded polynomial functions. We apply the result to certain families of quadratic modules in the polynomial ring.