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Clint McCrory* (clint@math.uga.edu), Mathematics Department, University of Georgia,
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A decade ago Burt Totaro introduced a functorial weight filtration of the cohomology of a real algebraic variety, in analogy with Deligne's weight filtration for a complex variety. The properties of this filtration and the dual filtration of homology have been developed by Parusiński and the author. Here we present current work of Thierry Limoges, who has shown that the cross product, cup product, and cap product are compatible with the weight filtration. These products are defined at the chain level, in the derived category of filtered chain complexes. The geometry of singularities of semialgebraic chains and Nash constructible functions plays a crucial role in the definition of these filtered products. (Received February 05, 2013)