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Rainer Sinn* (sinn@math.gatech.edu), School of Mathematics, Georgia Institute of Technology, 686 Cherry Street NW, Atlanta, GA 30332-0160, and **Grigoriy Blekherman**. *Real Rank with Respect to Varieties*.

We study the real rank of points with respect to a real variety X . This is a generalization of various tensor ranks, where X is in a specific family of real varieties like Veronese or Segre varieties. We will see an upper bound on the maximal real rank in terms of the codimension of X and establish its tightness by construction of examples. We will also give examples of varieties X for which the gap between maximal complex and the maximal real rank is arbitrarily large. (Received September 09, 2015)