ON THE LOCAL EQUATORIAL CHARACTERIZATION OF ZONOIDS

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ABSTRACT. A Zonoid is one of the most natural geometric objects. A finite Minkowski (vector) sum of segments is called zonotope (an easy example is a cube) and zonoid is defined as a limit of zonotopes.In this talk we will discuss a number of geometric properties of zonoids and will show that there is no local equatorial characterization of zonoids in odd dimensions. This gives a negative answer to the conjecture posed by W. Weil in 1977 and shows that the local equatorial characterization of zonoids may be given only in even dimensions. (joint work with Fedor Nazarov and Dmitry Ryabogin).