THE ENDPOINT MULTILINEAR K-PLANE THEOREM AND GENERALIZATIONS

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Abstract: We will talk about the ideas of our proof of the endpoint multilinear k-plane theorem. This theorem generalizes Guth's endpoint multilinear Kakeya theorem by dealing with neighborhoods of subspaces with dimension ¿1. The whole polynomial toolbox in our proof was developed in Guth's proof where he refined Dvir's polynomial method. The main new idea is to consider the interaction of the k-plane with more than 1 polynomials. Our theorem generalizes to the endpoint perturbed Brascamp-Lieb theorem and I will also talk about its proof.