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Defining the Amplituhedron. Preliminary report.

Amplituhedra were introduced by Nima Arkani-Hamed and Jaroslav Trnka ([arXiv:1312.2007](https://arxiv.org/abs/1312.2007)) in the context of $\mathcal{N} = 4$ supersymmetric Yang-Mills theory. They include as special cases even-dimensional cyclic polytopes, but in general they are not polytopal. Rather, they are defined as the image of a map from one positive Grassmannian to another Grassmannian (also including entire positive Grassmannians as special cases). I will discuss a new definition for the amplituhedron, which gives a direct characterization of the points of the amplituhedron, without reference to a map from another positive Grassmannian. I will also discuss our progress towards proving that the two definitions agree. (Received July 14, 2016)