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Matthew Fickus* (`matthew.fickus@gmail.com`). *Equiangular tight frames that contain simplices.*

An equiangular tight frame (ETF) is a type of optimal packing of lines in Euclidean space. They arise in various applications, including coding theory and compressed sensing. Some ETFs are a union of regular simplices. For example, there is an optimal packing of sixteen lines in six-dimensional real space that consists of the vertices of four tetrahedra, each lying in a particular three-dimensional subspace. Examples of such ETFs include Steiner ETFs as well as harmonic ETFs arising from McFarland difference sets. We give some results that hold about such ETFs in general. (Received December 15, 2016)