1116-VE-380   **Derege Mussa*** (`dxm146130@utdallas.edu`), Department of Mathematical Science, University of
Texas at Dallas, Richardson, TX 75080. *Existence of Self Dual Tetrahedon.*

Tetrahedron (plural Tetrahedra) is a three dimensional solid having four, vertices, four triangular faces and six edges which don't lie in a single plane. A six tuple S = (a, b, c, d, e, f) exists if the tetrahedron is facial and that the McCrean determinant is positive.

If S is a sextuple for (potential) tetrahedron T, S = (a, b, c, d, e, f) then T has faces a, b, c; a, e, f; b, d, f and c, d, e and the edges at the vertices has the pattern a, b, f ; a, c, e ; b, c, d and d, e, f. If we have a potential tetrahedron T and where the pattern of faces and vertices is interchanged then T is called the dual of tetrahedron T. Theorem (Derege Mussa) : If the potential tetrahedron T has sextuple S = (a, b, c, d, e, e, f). then the sextuples (f, e, d, c, b, a) gives rise to the potential dual tetrahedron. The question is If two tetrahedra are dual are they necessarily exist and if they are dual are they necessarily exist ? Conjecture: If S is a self dual for partition of tetrahedron then S can't exist. The paper discusses about 1.the dual of Tetrahedron 2. proof the conjecture using partition of tetrahedra (Received August 29, 2015)