

1116-H1-2945 **Ton Boerkoel*** (dr_ton_boerkoel@msn.com). *A connection between skew projections and perspective projections.*

In linear algebra one rarely discusses affine transformations let alone the very non-linear perspective projections. All these transformations are important in for example the world of computer graphics. In this talk we'll take a wonderful detour through the world of affine transformations and discuss how we can use affine coordinates to fit them within the realm of linear algebra. In particular we'll discuss the general skew projection matrices in 2 and 3 dimensional real vector spaces. We'll then tackle the highly non-linear perspective projection and use homogeneous coordinates to also describe these transformations using linear maps, after which we unearth a beautiful link between skew projections and perspective projections. The theme of this talk is a unification of sorts through the lens of projective geometry by using homogeneous and affine coordinates. (Received September 23, 2015)