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Chillicothe, OH 45601. *Relationships between Bundle Forms in Laguerre Planes.*

A Laguerre plane is a near linear space with two types of lines: null and positive. The set of lines is partitioned into parallel classes and Playfair's axiom is satisfied. A null line and a positive line cannot be parallel. The geometry also contains special affine planes called singular planes. Each singular plane contains null lines from exactly one parallel class and positive lines from at least two parallel classes. Each null line lies in exactly one singular plane and each positive line is contained in exactly two singular planes. In addition, if a null line is not in the parallel class of any line within a singular plane, then it intersects that plane. In a projective space the Veblin-Young axiom (Pasch's Lemma) allows us to construct a projective plane containing any two given intersecting lines. In a Laguerre plane this construction is complicated by three factors: parallelism, the two types of lines, and the fact that a pair of points do not necessarily lie on a line. The first two of these complications lead to 26 variants of the Veblin-Young axiom, called "bundle forms". Which bundle forms hold fundamentally effects the structure of a Laguerre plane. In this paper we prove several interrelationships between these bundle forms. (Received September 13, 2009)