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Tyrrell B. McAllister* (tmcallis@uwyo.edu), Ross Hall 202, Dept 3036, 1000 E. University Ave., Laramie, WY 82071-2000. *Non-integral analogues of reflexive polytopes*. Preliminary report.

An active area of research is to characterize the Ehrhart polynomials of convex integral polytopes. The dimension-2 case was solved by Scott in 1978 when he gave an inequality bounding the number of lattice points on the boundary of a convex integral polygon in terms of the number of lattice points in its interior. However, due to the phenomenon of quasi-period collapse, not all Ehrhart polynomials come from integral polytopes, even in dimension 2. Characterizing all Ehrhart polynomials of convex polygons remains open. We approach this problem by introducing and studying pseudo-reflexive polytopes, which are non-integral analogues of reflexive polytopes. (Received January 19, 2011)