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Guido Pezzini, Cauerstr. 11, 91058 Erlangen, Germany, and **Bart Van Steirteghem***, 1650
Bedford Avenue, Brooklyn, NY 11225. *On the weight monoids of smooth affine spherical varieties.*

Spherical varieties form a remarkable class of algebraic varieties equipped with an action of a complex reductive group G . They include toric, flag and symmetric varieties. A natural invariant of an affine spherical variety X is its weight monoid $\Gamma(X)$. It is the set of irreducible representations of G occurring in the coordinate ring of X , which is a multiplicity free G -module. In the 1990s, F. Knop conjectured that it is a complete invariant for smooth affine spherical varieties, and in 2006 I. Loseu proved this conjecture. Little is known about the image of the map that sends a smooth affine spherical variety to its weight monoid. We combinatorially characterize those free and “ G -saturated” monoids that belong to this image. (Received September 23, 2012)