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**Claudiu Raicu\*** (craicu@nd.edu), **Steven V Sam** and **Jerzy Weyman**. *Equations and syzygies for powers of binary forms.*

For  $a, b \geq 1$ , we consider the variety  $X_b^a$  of  $a$ -th powers of binary forms of degree  $b$ , with coefficients in a field of characteristic zero. We show that the defining ideal of  $X_b^a$  is generated in degree  $b + 1$  and has a linear minimal free resolution, by establishing the surjectivity of a generalized Howe map for  $SL_2$ -representations in the appropriate range, extending results of Abdesselam and Chipalkatti that hold when  $b = 2$ . Joint work with Steven V Sam and Jerzy Weyman. (Received July 28, 2020)