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**Grayson Jorgenson\*** (gjorgens@math.fsu.edu). *Linear recurrence sequences and the duality defect conjecture.*

It is conjectured that the dual variety of every smooth nonlinear subvariety of dimension  $> 2N/3$  in projective  $N$ -space is a hypersurface, an expectation known as the duality defect conjecture. This would follow from the truth of Hartshorne's complete intersection conjecture but nevertheless remains open for the case of subvarieties of codimension  $> 2$ . A combinatorial approach to proving the conjecture in the codimension 2 case was developed by Holme. This approach employs Segre classes to give a potential method of proving the duality defect conjecture by studying the positivity of certain homogeneous integer linear recurrence sequences. We will discuss the relationship with recurrence sequences and use it to prove that the conjecture holds in the codimension 3 case when  $N$  is odd. (Received September 13, 2019)