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**Kenneth R. Hoover\*** ([khoover@csustan.edu](mailto:khoover@csustan.edu)), Department of Mathematics, CSU Stanislaus, One University Circle, Turlock, CA 95382. *A Characterization Of Two and Three Interval Wavelet Sets.*

In Bownik's paper *On a problem of Daubechies* we are given a formula due to Speegle for a wavelet set in  $\mathbb{R}$  consisting of three intervals and corresponding to an arbitrary dilation  $a > 1$ . In this paper, the author extends Speegle's formula and derives formulas for all wavelet sets in  $\mathbb{R}$  consisting of two or three intervals. Furthermore, using these formulas as a characterization we show that there are no two interval wavelet sets corresponding to  $a > 2$  while there are uncountably many two interval wavelets sets corresponding to  $a = \frac{n+1}{n}$  for  $n \in \mathbb{N}$ . In contrast, for each value of  $a > 1$  there are a countably infinite number of three interval wavelet sets. (Received September 20, 2007)