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Brooke Susanna Ullery* (ullery@math.utah.edu). *Normality of Secant Varieties.*

If X is a smooth variety embedded in projective space, we can form a new variety by looking at the closure of the union of all the lines through 2 points on X . This is called the secant variety to X . Similarly, the Hilbert scheme of 2 points on X parametrizes all length 2 zero-dimensional subschemes. I will talk about how these two constructions are related. More specifically, I will show how we can use certain tautological vector bundles on the Hilbert scheme to help us understand the geometry of the secant variety, leading to a proof that for sufficiently positive embeddings of X , the secant variety is a normal variety. (Received September 02, 2015)