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Alexander Berkovich* (alex@uf1.edu), Dept. of Mathematics, 496 Little Hall, Gainesville, FL 32611. *On representation of an integer by $X^2 + Y^2 + Z^2$ and the modular equations of degree 3 and 5.*

I discuss a variety of results involving $s(n)$, the number of representations of n as a sum of three squares. One of my objectives is to reveal numerous interesting connections between the properties of this function and certain modular equations of degree 3 and 5. I propose an interesting identity for $s(p^2n) - ps(n)$ with p being an odd prime. (Received September 07, 2009)