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Laura L Steil* (laura.steil@uky.edu), Department of Mathematics, 715 Patterson Office Tower, University of Kentucky, Lexington, KY 40506, and **David Leep**. *Isometry Classes of Quadratic Forms over p -adic Rings*. Preliminary report.

Let f be a quadratic form defined over \mathbb{Z}_p , the ring of p -adic integers, and let $N_i(f)$ denote the number of solutions of $f \equiv 0 \pmod{p^i}$. In this talk we seek to find a formula for $N_i(f)$, and thus define a sequence $\{N_i(f)\}_{i=1}^{\infty}$. Then we determine whether this sequence and the dimension of f are sufficient to determine the isometry class of f over \mathbb{Z}_p . (Received September 16, 2010)