1145-13-357   **Kevin Bombardier*** (`kevin-bombardier@uiowa.edu`) and **D. D. Anderson**. *Atoms in Quasilocal Integral Domains.*

Let (R, M) be a quasilocal integral domain. We investigate the set of irreducible elements (atoms) of R. Special attention is given to the set of atoms in $M \backslash M^2$ and to the existence of atoms in M^2. While our main interest is in local Cohen-Kaplansky (CK) domains (atomic integral domains with only finitely many nonassociate atoms), we present results in the greatest generality possible. In contradiction to a statement of Cohen and Kaplansky, we construct a local CK domain with precisely eight nonassociate atoms having an atom in M^2. (Received September 03, 2018)