1044-54-89 **David Lutzer*** (lutzer@math.wm.edu), Mathematics Department, College of William and Mary, Williamsburg, VA 23187-8795. *Completeness, domain representability, and measurements.*

I will report on recent work that Harold Bennett and I did on representability and on measurement problems in domains and Scott domains. A preprint is available on my webpage at http://www.math.wm.edu.

We show that if a space X is representable as $X = max(D)$ where $max(D)$ is a G_δ-subset of a domain D, then X is first-countable and is the union of a family of dense completely metrizable subspaces, and we show that $[0, \omega_1)$ is representable in this way. We show that if $Y = max(S)$ is a G_δ in a *Scott* domain S, then Y is weakly developable (in the sense of Alleche, Arhangelskii, and Calbrix) and has a G_δ diagonal. Consequently it is not possible that $[0, \omega_1) = max(S)$ is a G_δ in a Scott domain S, and this corrects a mistake in the literature.

We show that Burke's non-developable, locally compact Hausdorff space with a G_δ-diagonal is homeomorphic to $max(S)$ where S is a Scott domain in which $max(S)$ is a G_δ-subset of S, and yet no measurement μ on S has $ker(\mu) = max(S)$. Finally we show that the kernel of a measurement on a Scott domain can consistently be a normal, separable, non-metrizable Moore space. (Received August 22, 2008)