1145-94-2262 **Rutuja Kshirsagar*** (rutujak@vt.edu), 461L McBryde Hall, Department of Mathematics, Virginia Tech, Blacksburg, VA 24061. *Expander codes and local properties.* Preliminary report.

Expander codes are formed using a double cover H of an expander graph $G = (V, E)$ of degree d and inner codes of length d over a finite field $\mathbb{F}$. The properties of the expander code depend on those of the underlying expander graph as well as the inner code. It has been shown by Hemenway et al. that when the inner code has a good rate, distance, and a smooth reconstruction algorithm in a noiseless setting, a corresponding expander code also has a good distance and is locally correctable (in a noisy setting). In this discussion, locally correctable means any codeword symbol can be recovered from a random sample of a small number of coordinates of a received word with high probability. A related but weaker notion is that of local recoverability where a codeword coordinate may be recovered by a specified set of coordinates (assumed to be error free) as opposed to a random sample. In this talk, we explore properties of expander codes that depend on their construction and properties of their inner codes. For example, we consider the effect of replacing the inner code with a locally recoverable code. (Received September 25, 2018)