998-42-31   **Keri A Kornelson*** (`keri@math.tamu.edu`) and **David R. Larson** (`larson@math.tamu.edu`).
Frames with specified norms and rank-one decomposition of operators.

Given a Hilbert space H and a sequence $c = c_i$ of positive real numbers, we define a frame corresponding to c to be a frame $\{x_i\}$ for H whose elements have norms given by the sequence, i.e. $\|x_i\| = c_i$. Given a positive operator B on H, we describe sufficient (and in specific cases, also necessary) conditions under which B is the frame operator for a frame corresponding to c. The proof involves the expression of B as a sum of rank-one positive operators. (Received January 03, 2004)