1125-46-977   **Armenak Petrosyan*** (`armenak.petrosyan@vanderbilt.edu`), 1326 Stevenson Center
Vanderbilt University, Nashville, TN 37240. *Iterative actions of operators on a system of vectors.*

We consider systems of vectors of the form

$$\{A^n g : \ g \in \mathcal{G}, n = 0, 1, 2, \dots\}$$

where A is a bounded operator on a Hilbert space $\mathcal{H}$ and $\mathcal{G}$ is a countable set of vectors in $\mathcal{H}$, and try to find conditions under which the system is a frame, basis, complete Bessel system etc. Some of the recent results and open questions will be discussed during the presentation. The problem takes its origins from a sampling theory problem, called dynamical sampling problem, where the unknown signal is recovered from its spatio-temporal samples. (Received September 13, 2016)