1070-46-306   **Irina N Seceleanu*** (`iseceleanu@bridgew.edu`), Department of Mathematics & Computer Science, Bridgewater State University, 131 Summer Street, Bridgewater, MA 02325. *How an orbit with a single limit point induces a dense orbit.*

Given a continuous linear operator T on a Hilbert space H we denote the orbit of a vector x in H by $Orb(T, x) = \{x, Tx, T^2x, \ldots\}$. There are many examples of such operators that possess a dense orbit $Orb(T, x)$ in H amongst which we count the adjoints of multiplication operators. In this talk we show that the adjoints of multiplication operators exhibit a rather remarkable property, namely if an operator has an orbit with a single non-zero limit point it will also possess a dense orbit. In other words, for the adjoint of a multiplication operator having an orbit with one non-zero limit point is equivalent to having an orbit with every vector as a limit point. (Received February 15, 2011)