1151-60-200   **Erin Brown-Crossen**, **Sevak Mkrtchyan*** (`sevak.mkrtchyan@rochester.edu`) and **Jonathan Pakianathan**. *Asymptotic completeness of random iid gap sequences.*

Various notions of completeness for increasing sequences of positive integers have been studied. For example, Lagrange showed that the sequence of integer squares $1, 4, 9, \ldots, n^2, \ldots$ is weakly ≤ 4-complete, while the Goldbach conjecture claims that the sequence of prime numbers is asymptotically weakly ≤ 3-complete. In this work we study asymptotic completeness of random weakly increasing sequences of integers which have iid gaps. We show that in general, with probability one, such a sequence is asymptotically complete. We further show that given some conditions on the gap distribution, with probability one, a random iid gap sequence of weights is an asymptotically k-complete sequence for every fixed $k \geq 2$. (Received August 18, 2019)