1014-60-457 **Donald P. Minassian*** (dminassi@butler.edu), Department of Math. and Actuarial Science, Butler University, Indianapolis, IN 46208. *Minimal Axiom Sets for Poisson Processes.*

A Poisson Process N has been defined traditionally as a counting process (on the nonnegative real axis) satisfying either of the following equivalent axiom sets:

Set A–(1) N has independent increments, (2) the number of events in any interval (s,t] is Poisson-distributed with mean m(t-s), where m>0 is independent of s and t. Set B–(1) N has independent increments, (2)Pr(1 event in any interval of length h)= mh+o(h), (3) Pr(2 or more events in any interval of length h)=o(h), where "Pr" is "Probability". For both sets A and B it is often hypothesized that N(0)=0.

Set A reduces simply to Pr(no events in any interval (s,t])=exp[-m(t-s)], m as above, and is independent of events in any nonintersecting interval.

In Set B, (3) reduces to Pr(2 or more events at any given point) = 0.

The propriety of assuming N(0) = 0 will be discussed. (Received September 16, 2005)