1014-52-1773 **Andras Bezdek*** (bezdean@auburn.edu) and **Gergely Ambrus** (ambruge@auburn.edu).
Revisiting a problem of D. Ismailescu and R. Radoicic concerning dense point sets. Preliminary report.

There are several results in the literature where one starts with a few points, describes a geometric construction to introduce some new points and proves that applying over and over the same construction one generates an everywhere dense point set of the plane. Recently D. Ismailescu and R. Radoicic (and earlier B. Grunbaum) showed that starting with a non collinear point set the repeated use of the construction "add to the figure all the intersection points of lines which connect pairs of already existing points" leads to a dense point set of the plane (with the exception of a few particular starting configurations). They also suggested to study similar problems where one uses the construction "add the incenters (circumcenters resp.) of all triangles formed by the existing points". In 2005 together with M. Iorio and M. Silva they settled these problem. Together with G. Ambrus we also solved these problems. We considered the higher dimensional versions and also proved that in cases like the circumcenter problem much more is true, namely it is enough to assume that one adds a point "close" to the circumcenter of existing triangles. (Received October 03, 2005)