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**Vladimir Dragovic\*** ([vladimir.dragovic@utdallas.edu](mailto:vladimir.dragovic@utdallas.edu)), The University of Texas at Dallas, 800 W. Campbell Road, FO 35, Richardson, TX 75080. *Discriminantly separable polynomials, Kowalevski top, and quad-graphs.*

The talk consists of two parts. Both parts consider pencils of quadrics and integrable quad-graphs. In the first part, the class of discriminantly separable polynomials in three variables of degree two in each, which we introduced recently, is classified and connected with pencils of conics. The relationship with the classical Kowalevski top is presented. Then, this class of polynomials is connected to the integrable quad-graphs in the sense of Adler, Bobenko and Suris. In the second part, we start with the billiard algebra, associated with billiard systems within pencils of quadrics. Our recent "the six-pointed star theorem", which was derived as an operational consistency for the billiard algebra operation, is interpreted also as a consistency condition for a line congruence. The results from the first part are joint with Katarina Kukic, and from the second part with Milena Radnovic. (Received July 11, 2017)