EQF-Note 2015-09-22

Background for these notes is: Chris van Tienhoven: Encyclopedia of Quadri-Figures http://www.chrisvantienhoven.nl/

QL-Tf1 and QL-Tf2 wrt QL-Cu1

The Clawson-Schmidt Conjugate QL-Tf1 is a point to point transformation, shortened CSC, the Line IsoConjugate QL-Tf2 is a line to line transformation, shortened LIC. Here QL-inscribed conics are considered. Their foci are CSC-partners on QL-Cu1 and their axes intersect with their LIC-partners orthogonal on QL-Cu1.



For *QL*-inscribed conics, centered on the Newton line *QL-L1*, holds:

- Lines through a point Z on the Newton line *QL-L1*, which are orthogonal to their *LIC*-image, are axes for the *QL*-inscribed conic, centered in Z.
- Lines through a point Z on the Newton line *QL-L1*, which are parallel to their *LIC*-image, are asymptotes for the *QL*-inscribed conic, centered in Z.

QL-Cu1 can be described in several ways with many interesting properties (see EQF). Wrt the CSC- and LIC-transformation here additional shall be mentioned:

• *QL-Cu1* is the locus for *CSC*-partners *X*, *X** with *XX** orthogonal *LIC*(*XX**).

Taking for X and X^* the foci of a *QL*-inscribed conic, XX^* is the main axis.

• The 3rd intersection *P* of *QL-Cu1* and the main axis of a *QL*-inscribed conic is the crosspoint with its orthogonal *LIC*-image.



- The *CSC*-image *P** is the crosspoint of the tangents in the foci at *QL-Cu1*.
- The only intersection Q of QL-Cu1 and the minor axis of a QL-inscribed conic is the crosspoint with its orthogonal LIC-image.



- The intersection of *PQ* and *P*Q** is the Miquel point *QL-P1*.
- The tangents in Q (Q*) at QL-Cu1 are orthogonal PQ (P*Q*).
- The *LIC*-images of the axes of a *QL*-inscribed conic intersect orthogonal in a point Z' on the Newton line *QL-L1*.
- The *LIC*-images of the axes of a *QL*-inscribed conic are the axes of a 2^{nd} *QL*-inscribed conic, centered in *Z'*, which has the same points *P* and *Q* as the reference conic.

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