Linkage and Residual Intersections: History of Cohen-Macaulayness

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Linkage theory is one of few theories in Commutative Algebra and Algebraic Geometry which is devoted to classify ideals (varieties). For instance one can show that the rational normal curve is linked to a line. So that, maybe because of this, rational normal curves share so much algebraic and arithmetic properties with lines. Among all, the Cohen-Macaulayness is a central property. In this talk we start from the beginning of the theory to review the works of Apery-Gaeta, Peskine-Szpiro and Huneke-Ulrich. We explain how the theory vastly generalized to the theory of Residual Intersections and discuss the recent progress in the topic, mainly obtained by the speaker and his collaborators.

References

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