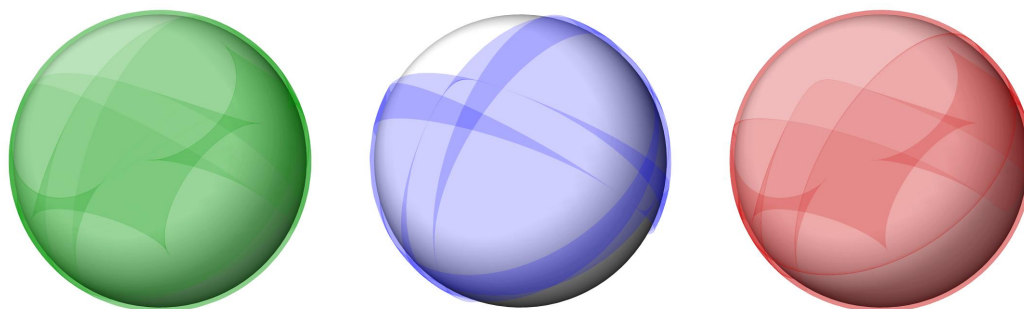


Surfaces associated to a knotted space curve

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Abstract. From any smooth knot K in 3-space, we derive three surfaces with maps to S^2 . These represent certain geometric features of the knot diagrams obtained as the orthogonal projections of K in all possible directions. It turns out that these surfaces have the same boundary curves and fold lines on S^2 . One can cut them apart and reglue in various different manners obtaining in each case a different compact 2-manifold with a map to S^2 . Examination of the degrees of these maps yield some interesting results, e.g. a new proof of the Fabricius-Bjerre formula.



The three surfaces derived from a trefoil knot.