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Analytic knots, satellites and the 4-ball genus

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Abstract. A satellite of a knot K is a link contained in a tubular neighbourhood of K (but not in a 3-ball contained in this neighbourhood), and not isotopic to K . In a classical paper Schubert gives a lower bound for the genus of satellites.

Consider a knot or link in the unit sphere in $\mathbb{C}^2$. Call it analytic (respectively, smoothly analytic) if it bounds a complex curve (respectively, a smooth complex curve) in the complex ball.

Let K be a smoothly analytic knot. For analytic satellite links contained in a sufficiently small tubular neighbourhood of K there is a (sharp) lower bound of the 4-ball genus (but not of the genus).

Moreover, these links can be completely described. The problem is related to branched coverings and braided surfaces.

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