

Triviality of 2-knot with three sheets

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Abstract. The sheet number of a 2-knot is a quantity analogous to the crossing number of a 1-knot. It is known that the sheet number is equal to one if and only if the 2-knot is trivial and that there is no 2-knot of sheet number two. We prove that there is no 2-knot of sheet number three. Therefore, the sheet number of any non-trivial 2-knot is at least four. It is an open problem whether there is a 2-knot of sheet number four other than the spun trefoil and the 2-twist-spun trefoil.