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**Paul Loya\*** (loya@math.binghamton.edu) and **Klaus Kirsten**. *Casimir's surgery problem*. Preliminary report.

In a very short 1948 paper, Hendrik Casimir published a surprising result using “analytic surgery” for manifolds with corners (specifically a solid three-dimensional box, which is a manifold with corners of codimension three). In previous work, Klaus Kirsten and I derived a Casimir-type surgery formula in the case of smooth manifolds; this formula unfortunately does not apply to Casimir’s original situation. However, in this talk, joint with Kirsten, I will present Casimir’s surgery formula in full generality for manifolds with corners of any codimension. This in particular applies to Casimir’s original situation and from our formula we can explain the origin and meaning of the mysterious constants that appear in Casimir’s original formula. (Received September 20, 2012)