

The homotopy type of the cobordism category

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Abstract.

This will be an expository talk following the paper [GMTW], whose main theorem describes the homotopy type of the cobordism category of d -dimensional (oriented, non-oriented, framed, spin, etc.) manifolds. In the case of oriented surfaces, this re-proves the *generalised Mumford conjecture* [MT] (a strengthening of the original *Mumford conjecture* [M]), which was first proven by I. Madsen and M. Weiss [MW].

References.

- [GMTW] S. Galatius, I. Madsen, U. Tillmann, M. Weiss, *The homotopy type of the cobordism category*, [Acta Math.](#), 2009.
- [MT] I. Madsen, U. Tillmann, *The stable mapping class group and $Q(\mathbb{C}P_{\mp}^{\infty})$* , [Invent. Math.](#), 2001.
- [MW] I. Madsen, M. Weiss, *The stable moduli space of Riemann surfaces: Mumford's conjecture*, [Ann. of Math.](#), 2007.
- [M] D. Mumford, *Towards an enumerative geometry of the moduli space of curves*, [Progr. Math.](#), 1983.