1142-57-41   **Mariano Echeverria*** (`me3qr@virginia.edu`), 141 cabell drive kerchof hall, charlottesville, VA 22903. *naturality of the contact invariant in monopole floer homology under strong symplectic cobordisms.*

the contact invariant is an element in the monopole floer homology groups of an oriented closed three manifold canonically associated to a given contact structure. a non-vanishing contact invariant implies that the original contact structure is tight, so understanding its behavior under symplectic cobordisms is of interest if one wants to further exploit this property. by extending the gluing argument of mrowka and rollin to the case of a manifold with a cylindrical end, we will show that the contact invariant behaves naturally under a strong symplectic cobordism. as quick applications of the naturality property, we give alternative proofs for the vanishing of the contact invariant in the case of an overtwisted contact structure, its non-vanishing in the case of strongly fillable contact structures and its vanishing in the reduced part of the monopole floer homology group in the case of a planar contact structure. we also prove that a strong filling of a contact manifold which is an l-space must be negative definite. (Received August 20, 2018)

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