Errata

Sheaves and D-modules on Lorentzian manifolds [JS15]

The proof of [JS15, Prop 1.12] actually proves the following result, which should be substituted to the original statement.

Proposition 0.1. *Let* (M, γ_M) *and* (N, γ_N) *be two causal manifolds and let* $f\colon M \to N$ *be a morphism of manifolds. Then,* $Tf(\mathrm{cl}_{\mathrm{pw}}(\gamma_M)) \subset \mathrm{cl}_{\mathrm{pw}}(\gamma_N)$ *if and only if* $\Lambda_f \overset{a}{\circ} \lambda_N \subset \lambda_M$. *These conditions imply that* f *is causal and are satisfied when* f *is strictly causal or when* f *is causal and* $\mathrm{cl}_{\mathrm{pw}}(\gamma_N) = \overline{\gamma_N}$.

Since time functions are $\mathbb{R}$-valued, this has no consequences on the rest of the paper, with the exception of Corollary 2.10 in which the maps should be strictly causal.

Global propagation on causal manifolds [DS98]

In [DS98, Prop. 4.4 (ii)], it is asserted that under mild conditions on the preorder, the constant sheaf (or a variant of this sheaf) on the graph of the causal preorder is a propagator. However, the proof is not complete and indeed, the result is not correct without extra hypotheses, as seen in [JS15, Example 2.16].

However, most of the applications to causal manifolds are correct when assuming the spacetime globally hyperbolic, as shown in [JS15].

Hyperbolic systems on causal manifolds [Sch13]

Proposition 6.6 and its corollaries which are extracted from [DS98] are not correct. They should be replaced with the results of [JS15].

References

[DS98] Andrea D'Agnolo and Pierre Schapira, *Global propagation on causal manifolds*, Asian J. Math. **2** (1998), no. 4, 641–653, available at `arXiv:9906.211`. Mikio Sato: a great Japanese mathematician of the twentieth century.

[JS15] Benoît Jubin and Pierre Schapira, *Sheaves and D-modules on Lorentzian manifolds* (2015), available at arXiv:1510.0149.

[Sch13] Pierre Schapira, *Hyperbolic systems and propagation on causal manifolds*, Lett. Math. Phys. **103** (2013), no. 10, 1149–1164, available at arXiv:1305.3535.