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Experimental constraints and a possible quantum Hall state at ν=5/2[1] DIMA FELDMAN, Brown Univ, GUANG YANG, RIKEN — Several topological orders have been proposed to explain the quantum Hall plateau at ν=5/2. The observation of an upstream neutral mode on the sample edge [Bid *et al.*, Nature (London) **466**, 585 (2010)] supports the non-Abelian anti-Pfaffian state. On the other hand, the tunneling experiments [Radu *et al.*, Science **320**, 899 (2008); Lin *et al.*, Phys. Rev. B **85**, 165321 (2012); Baer *et al.*, Phys. Rev. B **90**, 075403 (2014)] favor the 331 state which exhibits no upstream modes. We find a topological order, compatible with the results of both types of experiments. That order allows both finite and zero spin polarizations. It is Abelian but its signatures in Aharonov-Bohm interferometry can be similar to those of the Pfaffian and anti-Pfaffian states.

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