Mary Vaughan* (maryo@iastate.edu) and Pablo Raúl Stinga. Fractional derivatives in one-sided weighted Sobolev spaces.

Marchaud fractional derivatives can be defined in the most general way in the distributional sense. We start from this point and then show that the usual pointwise formulas for these operators indeed hold for functions in more general classes. The classes we consider are weighted Sobolev spaces with one-sided Sawyer weights which capture the one-sided nature of fractional derivatives. The pointwise and norm limits as the orders of the derivatives converge to an integer are also analyzed. (Received August 19, 2018)