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Hölder estimates for advection fractional-diffusion equations

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Abstract. We analyse conditions for an evolution equation with a drift and fractional diffusion to have a Hölder continuous solution. In case the diffusion is of order one or more, we obtain Hölder estimates for the solution for any bounded drift. In the case when the diffusion is of order less than one, we require the drift to be a Hölder continuous vector field in order to obtain the same type of regularity result.

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