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Quasi-invariance of fractional Gaussian fields nonlinear wave equation with polynomial nonlinearity.

We prove quasi-invariance of Gaussian measures μ_s with Cameron-Martin space H^s under the flow of the defocusing nonlinear wave equation with polynomial nonlinearities of any order for all $s > 5/2$, including fractional s . This extends work of Oh-Tzvetkov and Gunaratnam-Oh-Tzvetkov-Weber, who proved this result for a cubic nonlinearity and s an even integer. The main contributions are a modified construction of a weighted adapted to higher order nonlinearity, and an energy estimate for the derivative of the energy replacing the integration by parts argument introduced in previous works. We also address the question of (non) quasi-invariance for the dispersionless model raised in the introductions to the papers mentioned above. (Received August 17, 2019)