Global rough solutions to the cubic nonlinear Boussinesq equation

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Abstract. We prove that the initial value problem (IVP) for the cubic defocusing nonlinear Boussinesq equation $u_{tt} - u_{xx} + u_{xxxx} - (|u|^2 u)_{xx} = 0$ on the real line is globally well-posed in $H^s(\mathbb{R})$ provided $2/3 < s < 1$.