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Nonexistence of two-bubbles with opposite signs for the radial energy-critical wave equation

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Abstract. We consider the focusing energy-critical wave equation in space dimension $N \geq 3$ for radial data. We study two-bubble solutions, that is solutions which behave as a superposition of two decoupled radial ground states (called bubbles) asymptotically for large positive times. We prove that in this case these two bubbles must have the same sign. The main tool is a sharp coercivity property of the energy functional near the family of ground states.

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