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Abstract. The macroscopic response of $0.83PbMg_{1/3}Nb_{2/3}O_3$-$0.17PbTiO_3$ (PMN-17PT) single crystals has been investigated in order to resolve existing controversy about the structural phase transition in the rhombohedral side of $(1-x)PbMg_{1/3}Nb_{2/3}O_3$-$xPbTiO_3$ phase diagram. The combination of nonlinear dielectric spectroscopy, temperature dependant polarization and strain hysteresis loop measurements and ultrasonic spectroscopy revealed that ferroelectric phase occurs spontaneously in PMN-17PT single crystals. The experimental techniques applied in this work probes the bulk sample and can unambigously determine the existence of a spontaneous ferroelectric phase.