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The Schrödinger equation for a non-quantized matter field: a pedagogical introduction.

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Usual presentations of Physics Education start by postulating the existence of a classical field that obeys to the equation of motion, derived from a conveniently chosen Lagrangian density. But while electromagnetic fields are given a proper physics meaning, matter fields are considered only a technical instrument, unless they are quantized. Therefore, in this work, we aim to give a pedagogical construction which allows us to assign a physical meaning also to non-quantized matter fields. This operation is particularly important since we believe that Quantum Field Theory is more suited than Quantum Mechanics to introduce quantum physics in secondary schools.

Primary authors: LOVISETTI, Luisa (University of Milan, Department of Physics); GILIBERTI, Marco (University of Milan, Department of Physics)

Presenter: LOVISETTI, Luisa (University of Milan, Department of Physics)

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