Symmetry operators of the two-component Gross–Pitaevskii equation with a Manakov-type nonlocal nonlinearity

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We consider a system of two coupled Gross–Pitaevskii equations with a Manakov-type nonlocal nonlinear (cubic) term. In a semiclassical approximation formalism, the original system yields a reduced two-component nonlocal Gross–Pitaevskii equation quadratic in derivatives and independent variables. We refer this system of equations to a class of nearly linear integro–differential equations. An approach is proposed which allows one to construct a class of symmetry operators (mapping any solution to another solution of the equation) for the semiclassically reduced nonlocal two-component Gross–Pitaevskii equation.