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Flow field expression in a superposition of dipole flows and identification of dipole moment by continuous wavelet transform KAZUYUKI UENO, YUKO MATSUMOTO, Tohoku University — Continuous wabelet transforms suitable for incompressible flows are discussed. Bessel type wavelet is introduced and inverse transform is extended so that the divergence-free condition of the flow field is automatically satisfied. This extension results in the flow field expression in superposition of dipole flow fields. An efficient way to substitute a set of dipoles for the flow field is proposed to reduce the computational cost. Applications of the present transform for several two-dimensional flows are shown.

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