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ON THE SOLVABILITY IN THE SENSE OF SEQUENCES FOR SOME NONLINEAR FREDHOLM OPERATORS WITH THE LOGARITHMIC LAPLACIAN

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Abstract. We address the solvability of certain nonlinear nonhomogeneous systems of equations in one dimension containing the logarithmic Laplacian and the drift terms. We establish that, under the reasonable technical conditions, the convergence in $L^1(\mathbb{R})$ of the integral kernels yields the existence and the convergence in $L^2(\mathbb{R}, \mathbb{R}^N)$ of the solutions. We emphasize that the study of the systems is more difficult than of the scalar case and requires to overcome more cumbersome technicalities.

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