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Abstracts of Short Communications and Posters

Section:

10. Partial Differential Equations

1991 MS Classification: 35,34,47
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Global solvability of fully nonlinear equations and Toeplitz operators

We show the global solvability of mixed type Monge-Ampère equations by "blowing up" the problem onto the torus embedded at the singular point of the equations. The reduced operators on the torus are Toeplitz operators. After solving them by the method of harmonic analysis, we construct the solutions by a harmonic extension.
Three main applications are; solvability of Monge-Ampère equations in (outer unbounded) domain, extension of Kashiwara-Kawai-Sjöstrand theorem as to the convergence of all formal power series solutions to nonlinear equations, index formula of a system of ordinary differential equations.
Reference: Riemann-Hilbert factorization and Fredholm property of differential operators of irregular singular type, Ark. für Math. 33, (1995), 323-341.