MR630591 (82j:35029) 35E99
Yoshino, Masafumi
On the solvability of Goursat problems and a function of number theory.
Duke Math. J. **48** (1981), *no. 3*, 685–696.

The author proves what he asserts in the paper reviewed above [MR0628113 (82j:35028)]. He shows the sharpness of another result of his about the nonlinear Goursat problem in two variables. And he studies the linear Goursat problem of Hermitian type with constant coefficients: $\varepsilon u(x) + \sum_\alpha a_\alpha D^\alpha u(x) = h(x)$, where ε and $a_\alpha = \overline{a}_{-\alpha} \in \mathbf{C}$, $x \in \mathbf{C}^d$, $\alpha = (\alpha_1, \cdots, \alpha_d) \in A \subset \mathbf{Z}^d$, A is finite, $\alpha_1 + \cdots + \alpha_d = 0$ on A; h is given; u is unknown; h and u are analytic at the origin. He gives an expansion in polynomial eigenfunctions that is defined and is the unique solution if $\varepsilon \notin E$, where $E \subset \mathbf{R}$, $\text{meas}(E) = 0$; E is bounded, E is the set of zeros of a function ρ defined as follows by means of a bounded sequence $\mathbf{N} \ni k \mapsto \varepsilon_k \in \mathbf{R}$ and of a sequence $\mathbf{N} \ni k \mapsto n(k) \in \mathbf{N}$ tending to infinity: $\rho(\varepsilon) = \liminf_{k\to\infty} |\varepsilon - \varepsilon_k|^{1/n(k)}$.

Reviewed by *Jean Leray*