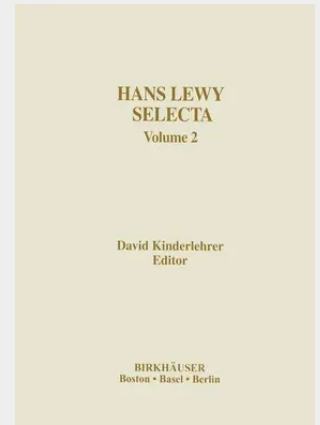


Hans Lewy Selecta

Volume 2

The work of Hans Lewy (1904--1988) has had a profound influence in the direction of applied mathematics and partial differential equations, in particular, from the late 1920s. Two of the particulars are well known. The Courant--Friedrichs--Lewy condition (1928), or CFL condition, was devised to obtain existence and approximation results. This condition, relating the time and spatial discretizations for finite difference schemes, is now universally employed in the simulation of solutions of equations describing propagation phenomena. Lewy's example of a linear equation with no solution (1957), with its attendant consequence that most equations have no solution, was not merely an unexpected fact, but changed the viewpoint of the entire field. Lewy made pivotal contributions in many other areas, for example, the regularity theory of elliptic equations and systems, the Monge--Ampère Equation, the Minkowski Problem, the asymptotic analysis of boundary value problems, and several complex variables. He was among the first to study variational inequalities. In much of his work, his underlying philosophy was that simple tools of function theory could help one understand the essential concepts embedded in an issue, although at a cost in generality. This approach was extremely successful. In this two-volume work, most all of Lewy's papers are presented, in chronological order. They are preceded by several short essays about Lewy himself, prepared by Helen Lewy, Constance Reid, and David Kinderlehrer, and commentaries on his work by Erhard Heinz, Peter Lax, Jean Leray, Richard MacCamy, François Trèves, and Louis Nirenberg. Additionally, there are Lewy's own remarks on the occasion of his honorary degree from the University of Bonn.

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