COMPARISON OF EXPERIMENTAL AND COMPUTER SIMULATED SNOW-BLOCK IMPACT ON STRUCTURES

Lorraine B. Mead, Department of Ovil Engineering, Montana State University, Bozeman, Montana 59717
Hideomi Nakamure, National Research Center for Disaster Prevention, Shijo, Japan
Theodore E. Lang, Department of Civil Engineering/Engineering Mechanics, Montana State University, Bozeman, Montana 59717

Data from experimental tests of snow block impact against vertical barriers is used to establish values of parameters in order to computer model the impact mechanics. The results show that total impulse, impact force and duration of impact can be modeled by accurate specification of the kinematic viscosity in the fluid representation. Viscosity is determined to be sensitive to snow block density, for snow at aoe, the temperature condition of the physical tests. Influence of variation of incident velocity and of barrier elasticity on impact dynamics is shown from the numerical results in comparison to the experimental results. Areas of further experimentation that are needed for checkout of the computer model are outlined.