



## High-Strain-Rate Compression Testing of Ice

By Mostafa Shazly

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 102 pages. Dimensions: 9.7in. x 7.4in. x 0.2in. In the present study a modified split Hopkinson pressure bar (SHPB) was employed to study the effect of strain rate on the dynamic material response of ice. Disk-shaped ice specimens with flat, parallel end faces were either provided by Dartmouth College (Hanover, NH) or grown at Case Western Reserve University (Cleveland, OH). The SHPB was adapted to perform tests at high strain rates in the range 60 to 1400s at test temperatures of -10 and -30 C. Experimental results showed that the strength of ice increases with increasing strain rates and this occurs over a change in strain rate of five orders of magnitude. Under these strain rate conditions the ice microstructure has a slight influence on the strength, but it is much less than the influence it has under quasi-static loading conditions. End constraint and frictional effects do not influence the compression tests like they do at slower strain rates, and therefore the diameterthickness ratio of the samples is not as critical. The strength of ice at high strain rates was found to increase with decreasing test temperatures. Ice has...

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