

[知能生産システム工学]

32-17 DYNAMIC BEHAVIOR OF MATERIALS INDUCED BY EXPLOSIVE LOADINGS INITIATED USING WIRE EXPLOSION TECHNIQUES

知能生産システム工学科	教授	廣江 哲幸
	教授	松尾 日出男
	助教授	藤原 和人
大学院自然科学研究科	後期課程	安部 尊之
三井ハイテック株式会社		久寿米木 和宏

The wire explosion techniques have been applied to produce two kinds of detonation waves; plane and cylindrically diverging detonation waves in powder PETN, supplying explosive loadings for the study of the dynamic response of materials. The plane detonation waves are transferred to one-dimensional triangular-shaped pressure pulses in metal plate specimens, causing the spall fracture. The cylindrical diverging detonation waves are used to study the uniform expansion of steel cylinders at high strain rates. These dynamic behavior is investigated using diagnostic tools and hydro codes.

(Journal of Materials Processing Technology, Vol. 85, 1999-1, pp. 56-59,)