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Sommario/riassunto	Ultrasound excitation of structural steel members leads to localised energy dissipation at existent fatigue cracks and thus allows for thermographic flaw detection. Essential effects on the defect-selective heating, such as flaw size, plate thickness, crack mouth opening or static preload, are systematically investigated. Laser vibrometry measurements of the crack edges, theoretical modelling of frictional heating and numerical simulations contribute to the understanding of the involved physics.