

## 研究論文

## 超音波計測時の固体接触部からの高調波発生に関する実験的検討

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Experimental Study of Harmonic Component Generation from the Contact of Solids in Ultrasonic Instrumentation

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Generation properties of second harmonic component for the infinite amplitude ultrasonic wave originated from the contact between solids by CAN (contact acoustic non-linearity) are examined. Effect of generation for the harmonic component for area, pressure and surface roughness of the solid contact are systematically experimented using glass blocks to clarify the properties of CAN. From the experiments using large amplitude 1 MHz ultrasonic burst sine wave, the second harmonic component of 2 MHz generated by CAN which depends on the true contact area of the solid contact is clarified. Surface roughness of solid contact which becomes important factor for generating CAN is also examined.

Thick adhesive layer introduced between solids surface is effective to reduce the generation of CAN is newly suggested.

*Key Words* : ultrasonic wave, second harmonic component, CAN, true contact area, surface roughness, thick layer