Abstract
We actively move our hands when exploring the external world and acquiring information about an object’s attributes. For example, we push an object to discern its hardness and stroke an object to determine its roughness. However, the role of hand motion in tactile perception has been largely overlooked. In this study, we investigated whether tactile perception can be estimated by the analysis of hand and eye motions and found that these motions carry information about it. Our findings will provide insights into the mechanisms of tactile perception as well as into the design of manual haptic interfaces.

Measurement & Analysis
I. Hand and eye motions during tactile exploration were measured.

II. Motion features were extracted from hand and eye motions.

III. The relationships between motion features and tactile ratings were analyzed.

Findings
Hand and eye motion can explain hardness, roughness, stickiness, warmth.

Application
Estimation of tactile feelings by measuring body motions will be useful for subjective evaluation of haptic interfaces and haptic products.

Reference

Contact
Takumi Yokosaka Sensory Representation Research Group, Human Information Science Laboratory
Email: yokosaka.takumi(at)lab.ntt.co.jp

Copyright (C) 2017 NTT Communication Science Laboratories