先端科学技術研究科　修士論文要旨

所属研究室 (主指導教員)	光メディアインタフェース (向川　康博　(教授))		
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要旨

In this thesis, we propose a new cue of depth sensing using thermal radiation.
Our method realizes passive, texture independent, far range, and dark scene applicability, which can broaden the depth sensing subjects.
A key observation is that thermal radiation is attenuated by the air.
By modeling the wavelength-dependent attenuation by the air and building multi-spectral LWIR measurement system, we can jointly estimate depth, temperature, and emissivity of the target.
We analytically show the capability of the thermal radiation cue and show the effectiveness of the method in the real-world scenes using an imaging system with a few bandpass filters.