DETECTION OF WINDOWS IN IR BUILDING TEXTURES USING MASKED CORRELATION

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ABSTRACT:

Infrared (IR) images depict thermal radiation of physical objects. Imaging the building hull with an IR camera allows thermal inspections. Mapping these images as textures on 3D building models, 3D geo-referencing of each pixel can be carried out. This is helpful for large area inspections. In IR images glass reflects the surrounding and shows false results for the temperature measurements. Consequently, the windows should be detected in IR images and excluded for the inspection. In this paper, an algorithm for window detection in textures extracted from terrestrial IR images is proposed. First, a local dynamic threshold is used to extract candidates for windows in the textures. Assuming a regular grid of windows masked correlation is used to find the position of windows. Finally, gaps in the window grid are replaced by hypothetical windows. Applying the method for a test dataset, 79% completeness and 80% correctness was achieved.

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