Desolneux, Agnès; **Moisan, Lionel**; **Morel, Jean-Michel**
Edge detection by Helmholtz principle. (English) Zbl 0988.68819
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Summary: We apply to edge detection a recently introduced method for computing geometric structures in a digital image, without any a priori information. According to a basic principle of perception due to Helmholtz, an observed geometric structure is perceptually "meaningful" if its number of occurences would be very small in a random situation: in this context, geometric structures are characterized as large deviations from randomness. This leads us to define and compute edges and boundaries (closed edges) in an image by a parameter-free method. Maximal detectable boundaries and edges are defined, computed, and the results compared with the ones obtained by classical algorithms.

MSC:

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68U10 Computing methodologies for image processing

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