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Breast ultrasound image co-segmentation by means of multiple-domain knowledge. (Chinese. English summary) [Zbl 1363.92024](#)

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Summary: Because of low signal-noise ratio, low contrast and blurry boundaries, breast ultrasound (BUS) image segmentation is quite challenging. In this paper, a multiple-domain knowledge based co-segmentation model is proposed for BUS segmentation. It combines spatial and frequency domain prior knowledge and introduces the idea of co-segmentation to segment BUS sequence. First, tumor poses, position and intensity distribution are modeled to constrain the segmentation in the spatial domain, and then the edge informations of the tumor are detected and obtained by using the phase feature and zero-crossing feature in the frequency domain. Finally, the BUS sequence segmentation is formulated as a co-segmentation problem. Experimental results show that the proposed method can handle low contrast and hypoechoic BUS images well, and segment BUS images accurately.

MSC:

[92C55](#) Biomedical imaging and signal processing

Keywords:

[breast ultrasound images](#); [co-segmentation](#); [multiple-domain knowledge](#); [computer-aided diagnosis](#)

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