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## **Vibroacoustography: a new imaging modality based on ultrasound**

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Imaging elastic properties of tissues has become a new field in image sciences known as elastography. Variation in elasticity of soft tissues is commonly related to pathologies. Thereby, noninvasive techniques to image elasticity parameters of in vivo tissues are promising tools in medical diagnosis. The underlying principle of elastography is to measure or track the induced motion of tissue due to an external applied force. One of the most effective ways to produce such force is to use radiation stress of ultrasound. Vibroacoustography is an elastography technique that images the response of an object (or tissue) to the lowfrequency dynamic radiation stress produced by a localized ultrasound beam. The dynamic radiation is caused by the wave momentum transferring to an object or propagating medium. In vibroacoustography, this stress is yielded by two cofocused monochromatic ultrasound beams of slightly different frequencies. The tissue within the system focal zone is subjected to vibration at the beat frequency of the ultrasound beams. It, thus, irradiates a field (acoustic emission) which can be probed by an acoustic detector. An image can be formed based on the acoustic emission of each sampled point in the tissue. In this talk, we present the underlying principle of vibroacoustography, i.e., dynamic radiation stress and the latest trends of this technique for medical diagnosis. We particularly discuss multifrequency vibroacoustography as a technique which acquires several images of a tissue with distinct beat frequencies at once.