

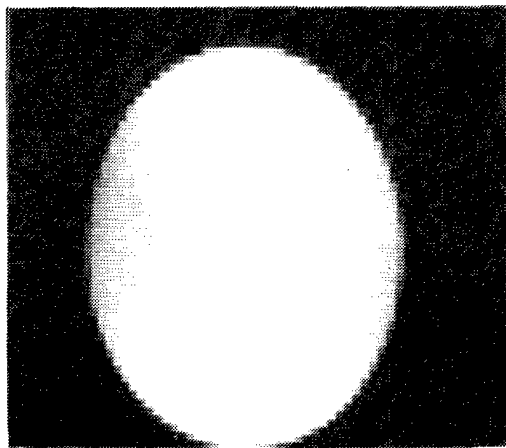
## A SENSITIVE VOLUME METHOD USING MODIFIED STIMULATED ECHOES

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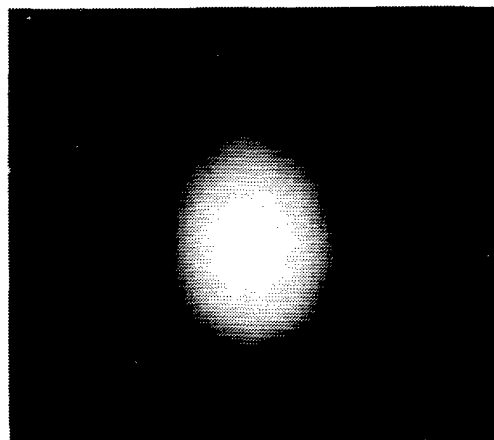
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Modified Stimulated Echoes (MSTE) have been firstly introduced for elimination of signal arising from stationary nuclei in flow imaging [1]. More recently it has been demonstrated that MSTE are also suitable for spectral editing [2,3] and for spatial localization using surface coil [4]. In this work we describe a sensitive volume determination based on the MSTE principle. During the second interpulse delay of a  $\theta-t_1-\theta-t_2/2-2\theta-t_2/2-\theta-t_1$ -ACQ. (MSTE) sequence a gradient is applied ; this gradient creates stripes of alternatively high and low sensitivity perpendicularly to its direction. With several acquisitions associated with given orientations of the gradient, one may select the signal arising from a sensitive volume located

at the intersection of the successive "central" stripes. The method is illustrated in Fig.1 on a two-dimensional experiment. It must be pointed out that here, spatial localization is independent of the resonance frequency since the  $180^\circ$  pulse compensates static field inhomogeneity as well as chemical shifts. Improvement of surface coil localization is the most straightforward application of the method : A surface gradient [5] is employed during the first interpulse delay in order to eliminate signal detection near the plane of the coil and a gradient rotating around the coil axis permits one to focus the observation along this axis. This arrangement allows to solve indirectly the problem of flux concentration when employing surface coil.



a



b

Figure 1. MSTE image of a circular phantom

- (a) without gradient during the second interpulse delay  
 (b) Sum of eight data with gradient having  $45^\circ$  orientation apart in the image plane.

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