U.S. Patents

Title:	NMR scanner with motion zeugmatography	
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Abstract

An NMR zeugmatographic scanner is modified to produce flow images. A motion sensitizing gradient field is applied to the gyromagnetic nuclei after transverse excitation and prior to emission measurement. The motion sensitized free induction signal which results is processed using an inverse Fourier transformation to produce a number of useful images.

Exemplary Claims

Claim 1:

In a gyromagnetic resonance instrument for producing an image of an extended subject which contains both stationary gyromagnetic material and moving gyromagnetic material, in +L which the instrument +L performs a measurement cycle by applying a transverse excitation signal to a gyromagnetic material and to thereby impart a transverse magnetic moment thereto, and which produces a FID signal responsive to emissions by the transversely magnetized gyromagnetic material, the improvement comprising:

- means for locating the position of the gyromagnetic material within the extended subject which is producing a FID signal;
- means for motion sensitizing a FID signal in which a motion sensitizing magnetic field gradient F is applied to the gyromagnetic material for a period of time **2** T after its transverse excitation and prior to the production of the FID signal, and wherein the motion sensitizing magnetic field gradient F has alternating polarity with respect to the gyromagnetic material such that its integral over the time period **2** T is substantially zero; and
- detector means for receiving the FID signal and producing therefrom a signal S_1 (t) which is phase-referenced to the cosine phase of the transverse excitation signal and a signal S_2 (t) which is phase-referenced to the sine phase of the transverse excitation signal.

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