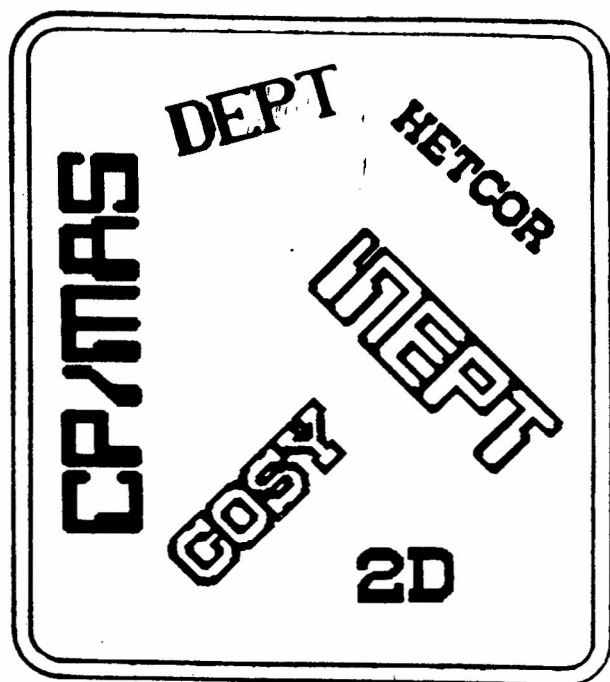


RESSONÂNCIA MAGNÉTICA NUCLEAR



II ENCONTRO DE USUÁRIOS

ANGRA DOS REIS RJ
9 a 13 de maio de 1989

RESUMOS

VARIABLE INDUCTANCE RESONATORS FOR NMR IMAGING AT 2 TESLA

H. Panepucci, M.A. Schmidt, A. Tannús, T.J. Bonagamba
Instituto de Física e Química de São Carlos, USP
Caixa Postal 369, 13.560 - São Carlos, SP

At the high frequencies and large volumes required for MR imaging at 2 Tesla bird cage type resonators(1) based on the closed transmission line concept are preferred since they allow an excellent approach to the $\cos(\theta)$ cylindrical current distribution and thus produce a highly homogeneous B_1 field. Both high pass and low pass types of transmission lines can be used. The first is particularly suited for mechanical tuning through the use of variable length rods in a "trombone like" arrangement. A simple screw driver mechanism can be used to modify the axial dimension of the resonator thus changing the device inductance parameter which produces a smooth independent frequency adjustment with minimal effect on the impedance matching.

Several devices were made for operation at 85 MHz and various diameters and number of rod elements. The dimensions and proper parameter values are given in the Table I for one of them. A particular one (C) gives a 90° pulse of 550 microseconds when driven with an AR 200 Amplifier Research 200 W power amplifier. A two millimeter thick coronal slice of a human hand obtained using this resonator with two phase alternated acquisitions per echo will be shown as a photograph in the poster.

Table I

Resonator	Volume (cm ³)	τ (μ s)	B_1 (mGauss)
C	4834	547 ± 3	215 ± 1
A	1357	202 ± 2	528 ± 6
B	639	124 ± 1	949 ± 8

- (1) C.E. Hayes, W.A. Edelstein, J.F. Shenk, O.M. Mueller, M.Eash - J. Magn. Res. 63, 622-628 (1985).

Campo	Dado
*****	Documento 1 de 1
No. Registro	000786074
Tipo de material	TRABALHO DE EVENTO-RESUMO - NACIONAL
Entrada Principal	Panepucci, Horácio Carlos
Título	Variable inductance resonators for nmr imaging at 2 tesla.
Imprensa	Angra dos Reis : Associacao de Usuarios de Ressonancia Magnetica Nuclear, 1989.
Descrição	p.32.
Autor Secundário	Schmidt, M A (*)
Autor Secundário	Tannus, Alberto
Autor Secundário	Bonagamba, Tito José
Autor Secundário	Encontro de Usuarios de Ressonancia Magnetica Nuclear (Rmn) (2. 1989 Angra dos Reis, RJ)
Fonte	Resumos, Angra dos Reis : Associacao de Usuarios de Ressonancia Magnetica Nuclear, 1989
Unidade USP	IFQSC-F -- INST DE FÍSICA DE SÃO CARLOS
Unidade USP	IFQSC-F -- INST DE FÍSICA DE SÃO CARLOS
Unidade USP	IFQSC-F -- INST DE FÍSICA DE SÃO CARLOS
Localização	IFSC PROD001181