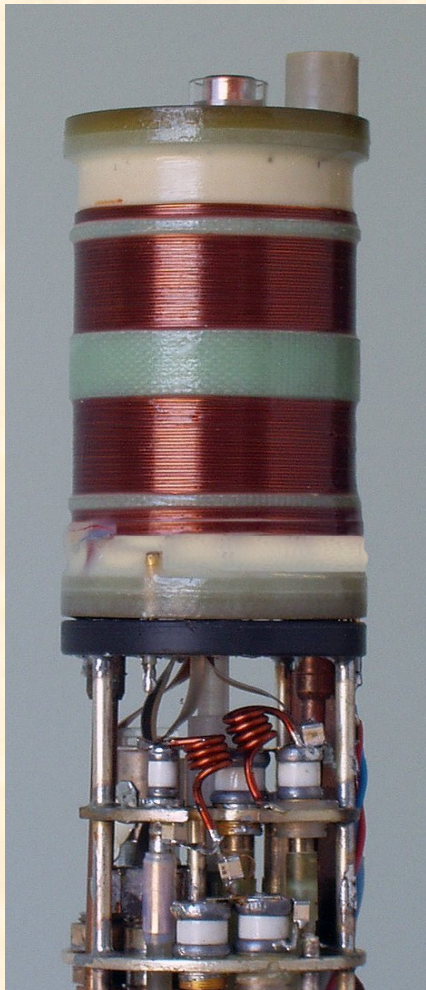


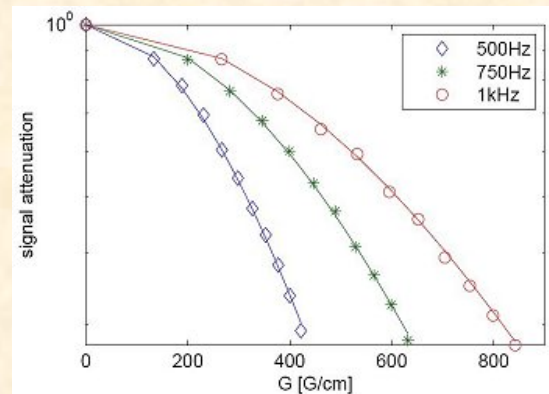
Doty PFG / Diffusion – Z Gradient Coils and Probes

- Measure the lowest diffusion coefficients– to $10^{-15} \text{ m}^2/\text{s}$
- Minimal eddy currents
- Highest strength gradients
- Best thermal stability
- Highest mechanical stability
- Largest sample region with 4% gradient uniformity
- Excellent spectral resolution
- $^1\text{H}/\text{X}$, direct or indirect
- For fields up to 900 MHz

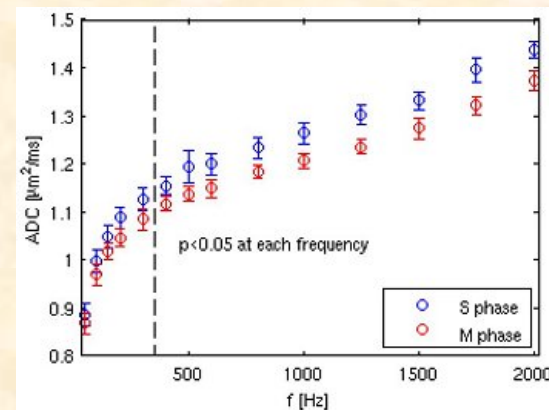


Doty 300 MHz, 16-38 Z Gradient, Diffusion Probe Spectra

Courtesy of: Junzhong Xu and Prof. John Gore, Vanderbilt University, Nashville, TN



1. Experimental (markers) and fitted (lines) signal attenuation as a function of diffusion gradient amplitudes and frequencies



2. Dispersion curves (ADC vs f) of two types of synchronized cells. Error bars show standard deviations of all six samples

Parameter	Model 16-38	Model 20-40C	Model 47-70	units
Outside diameter	38	39	70	mm
Diameter of rf shield	16	20	50	mm
Clear I.D.	14	17.5	47	mm
Cooling method	water	water	water	-
Continuous gradient	380	180	75	G/cm
Continuous gradient	3.8	1.8	.75	T/m
Pulse gradient	3800	1100	480	G/cm
Duty Cycle	1%	2.5%	2.5%	
Gradient gain, α	480	180	30	mT/A/m
Continuous current	8	10	25	A
Peak current	80	60	160	A
d_i for 4% local deviation	6	12	24	mm
z_i for 4% local deviation	13	28	30	mm
DC resistance, R_E	1.6	1.5	0.7	Ω
Inductance, L	130	200	170	μH
Slew rate, $\alpha V/L$, at 1 V	3700	900	180	T/m/s

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