



ПЛАЗМЕННО-ПЫЛЕВАЯ СТРУКТУРА В СИЛЬНОМ МАГНИТНОМ ПОЛЕ В УЗКОМ КАНАЛЕ ТОКА

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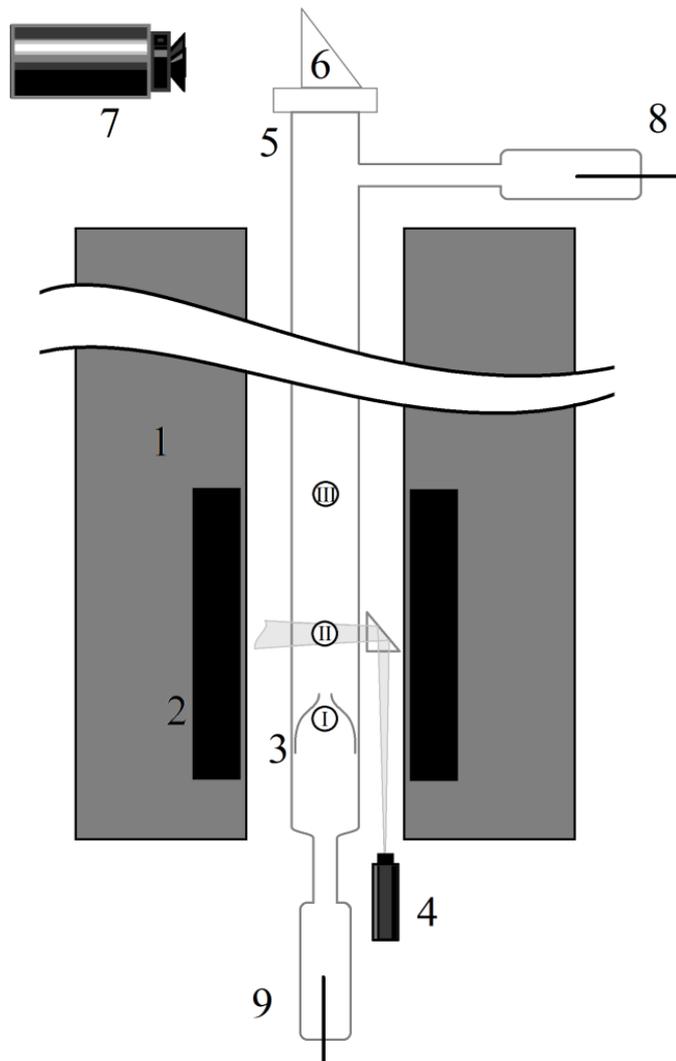
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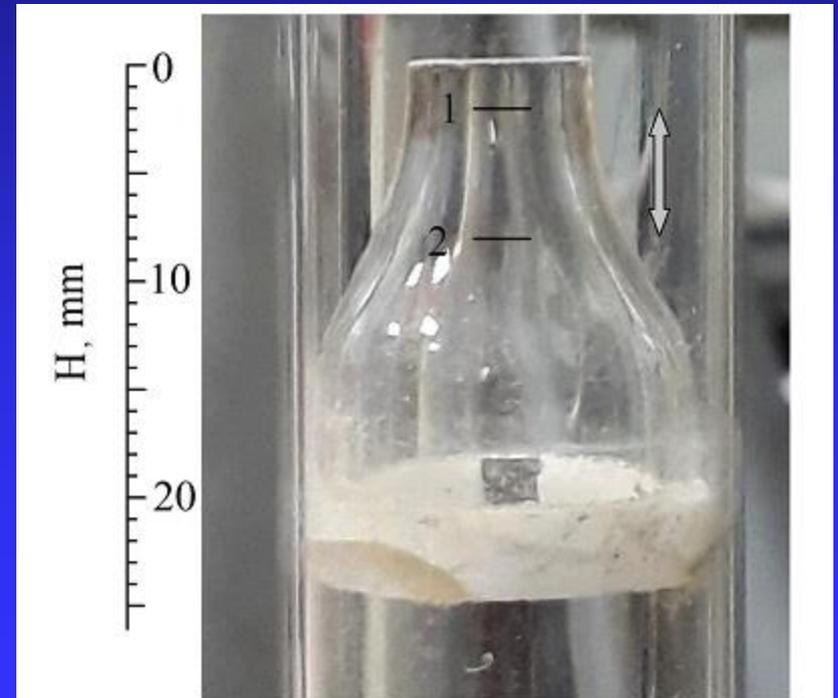
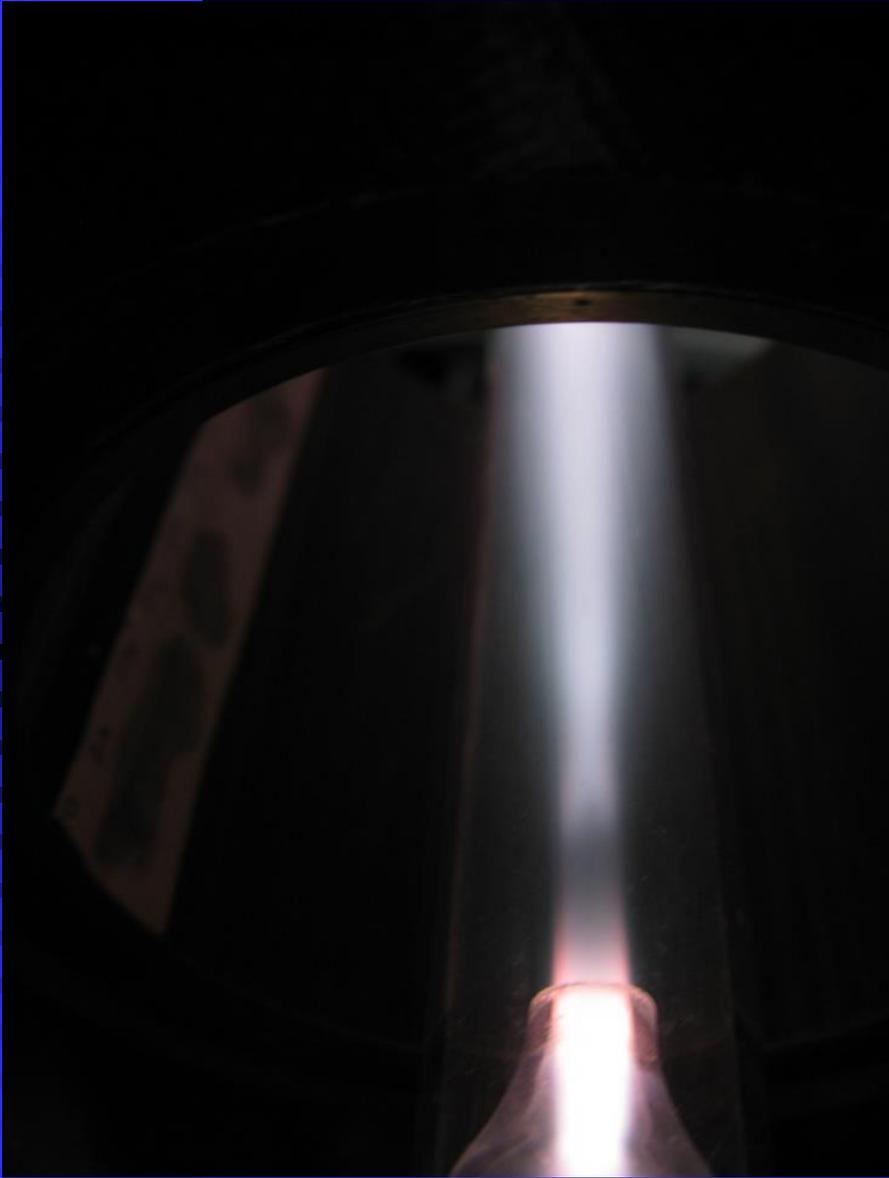
О пылевой структуре в ловушке во вставке в магнитном поле до 2 Тл

- высокая скорость вращения, направление
- уплотнение структуры в поле около 0.1 Тл,
- формирование тонких эквидистантных орбит при вращении от 15 рад/с
- короткая и длинная вставки, разные скорости
- немонотонная зависимость скорости от B
- особенности вращения в неоне, аргоне, гелии

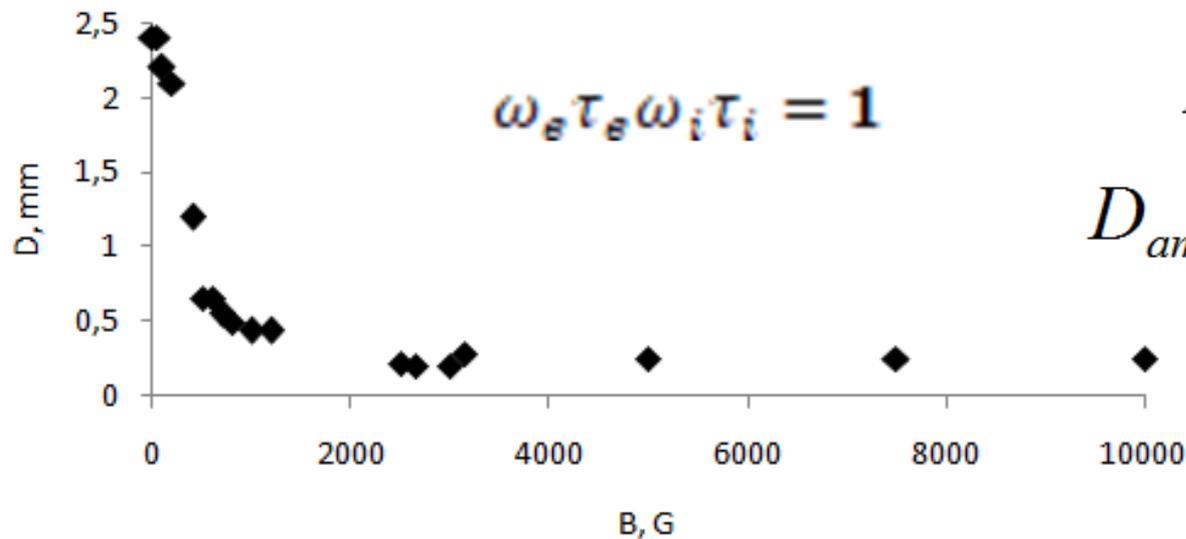
Set up



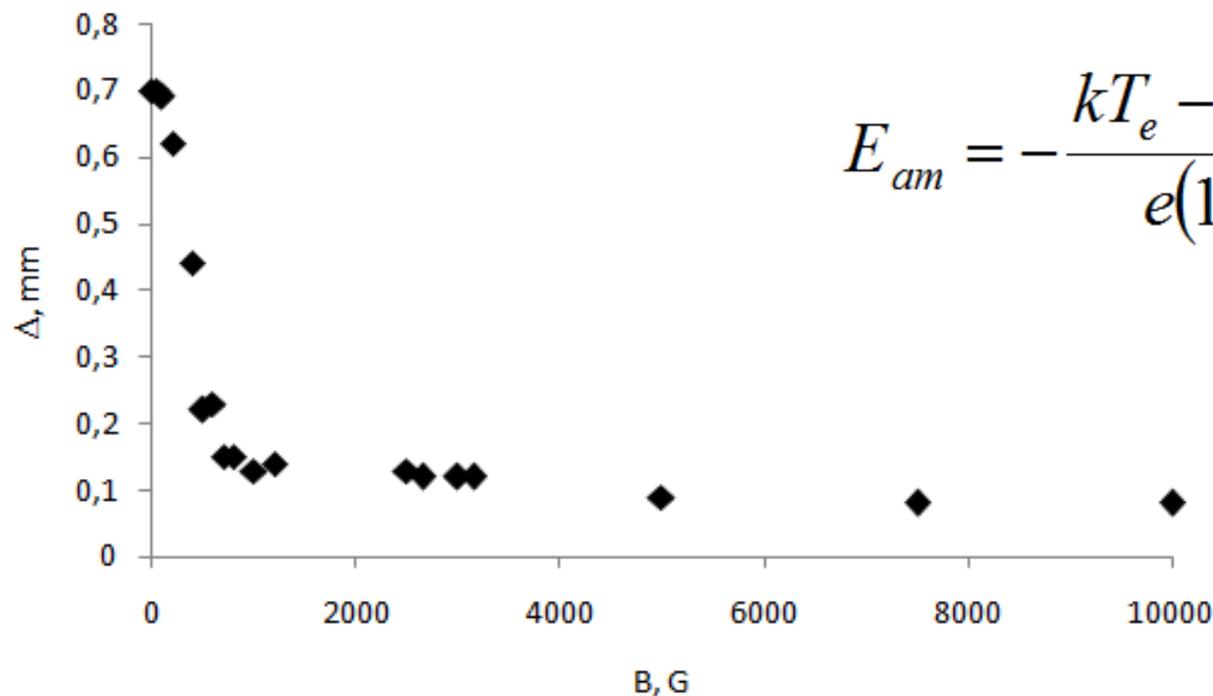
Dusty structure in an insert narrowing the current channel



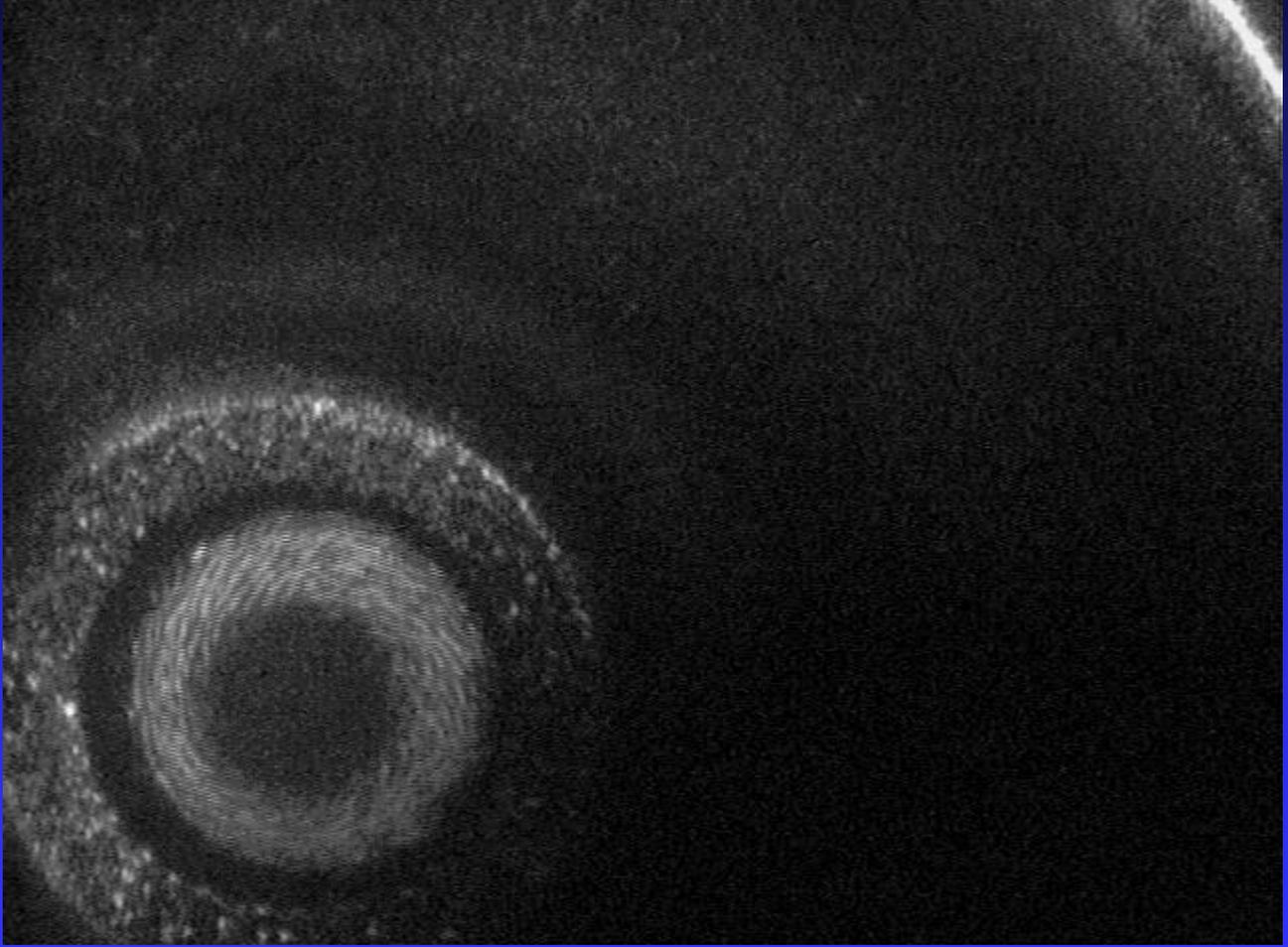
Радиальный размер



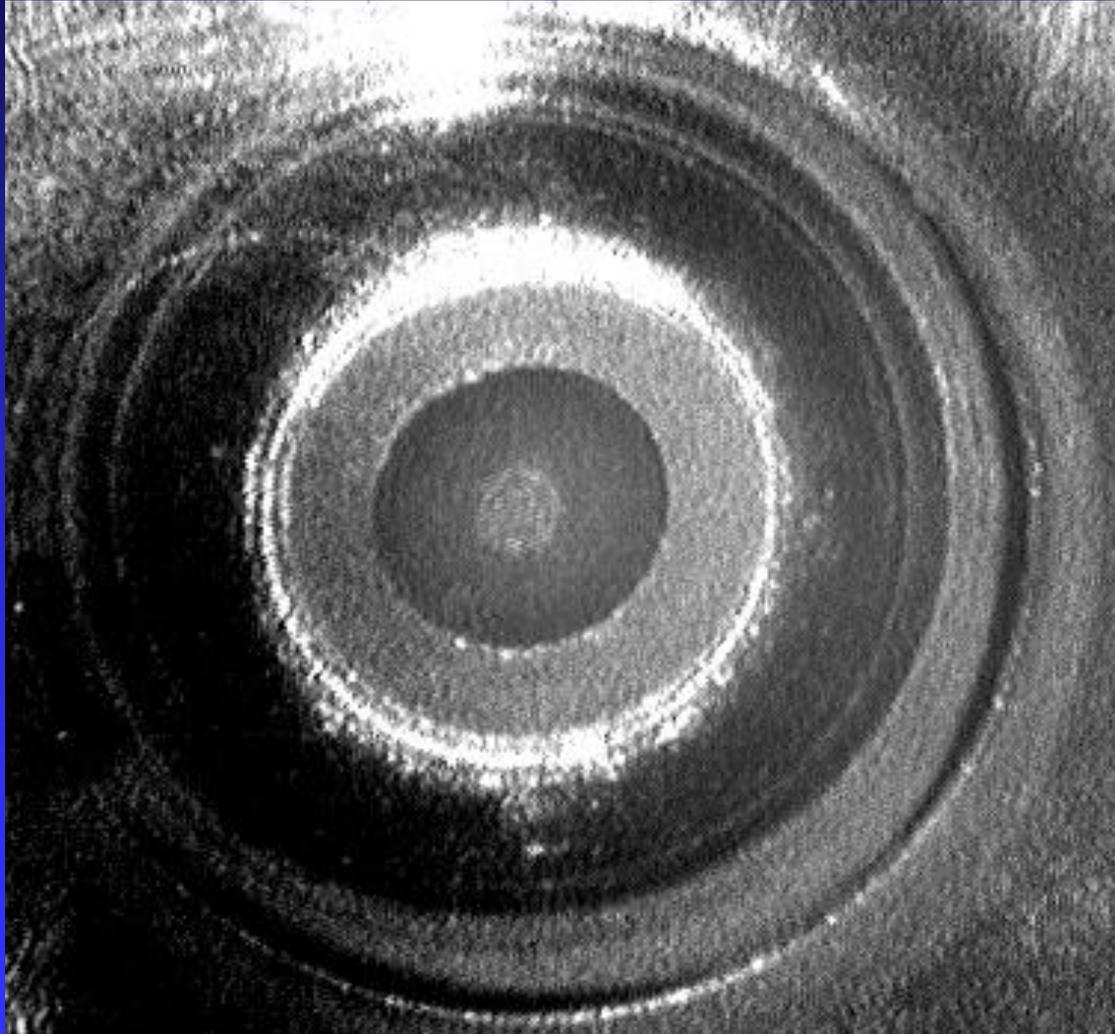
$$D_{am\perp} = \frac{D_{am}}{1 + \omega_e \tau_e \omega_i \tau_i}$$



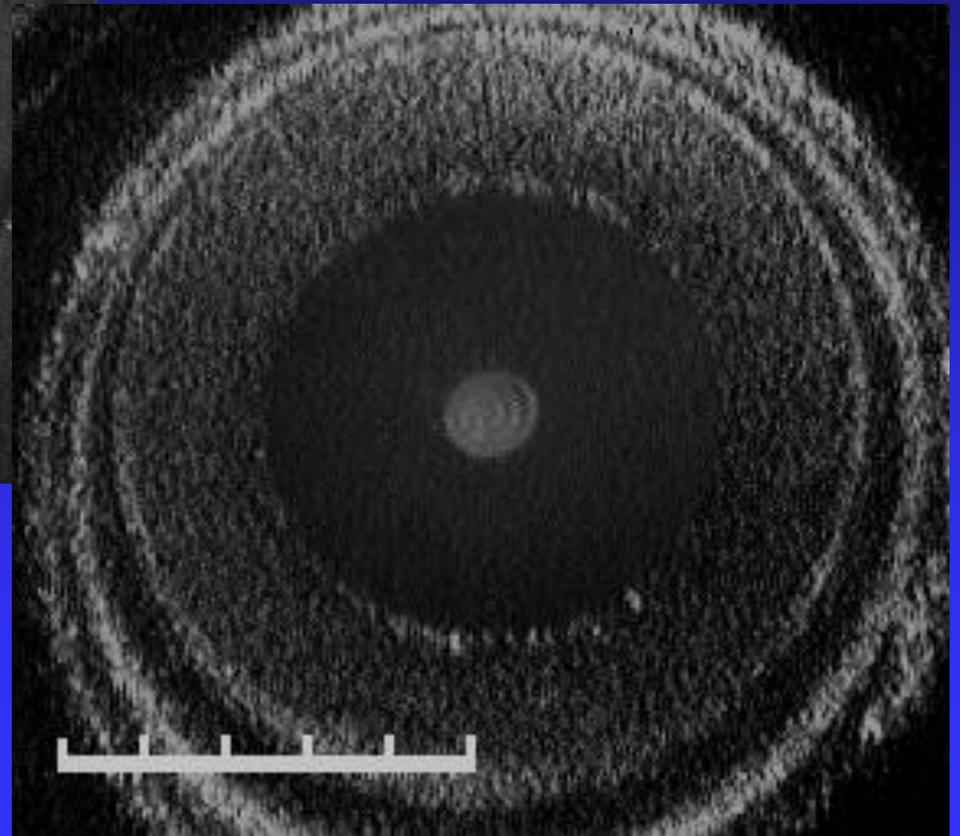
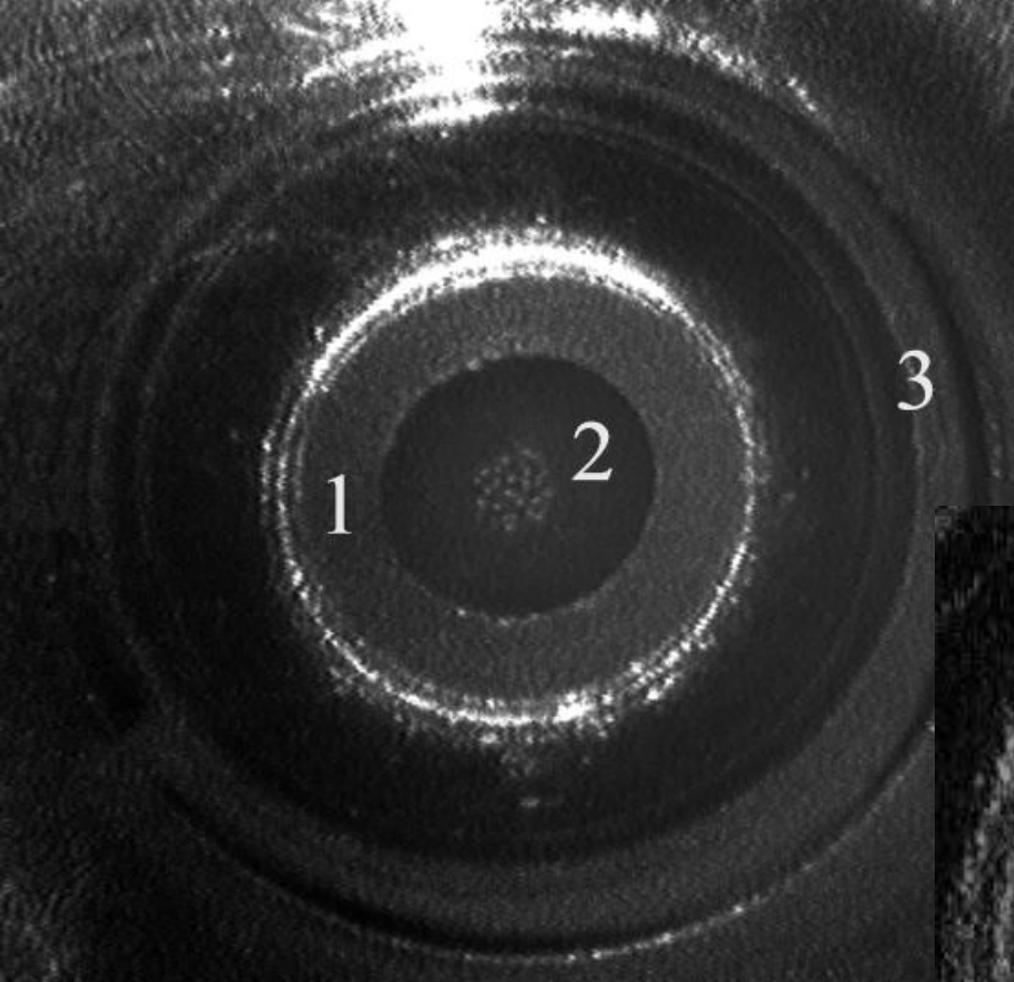
$$E_{am} = - \frac{kT_e - kT_i (\omega_e \tau_e \omega_i \tau_i) \nabla n}{e(1 + \omega_e \tau_e \omega_i \tau_i) n}$$

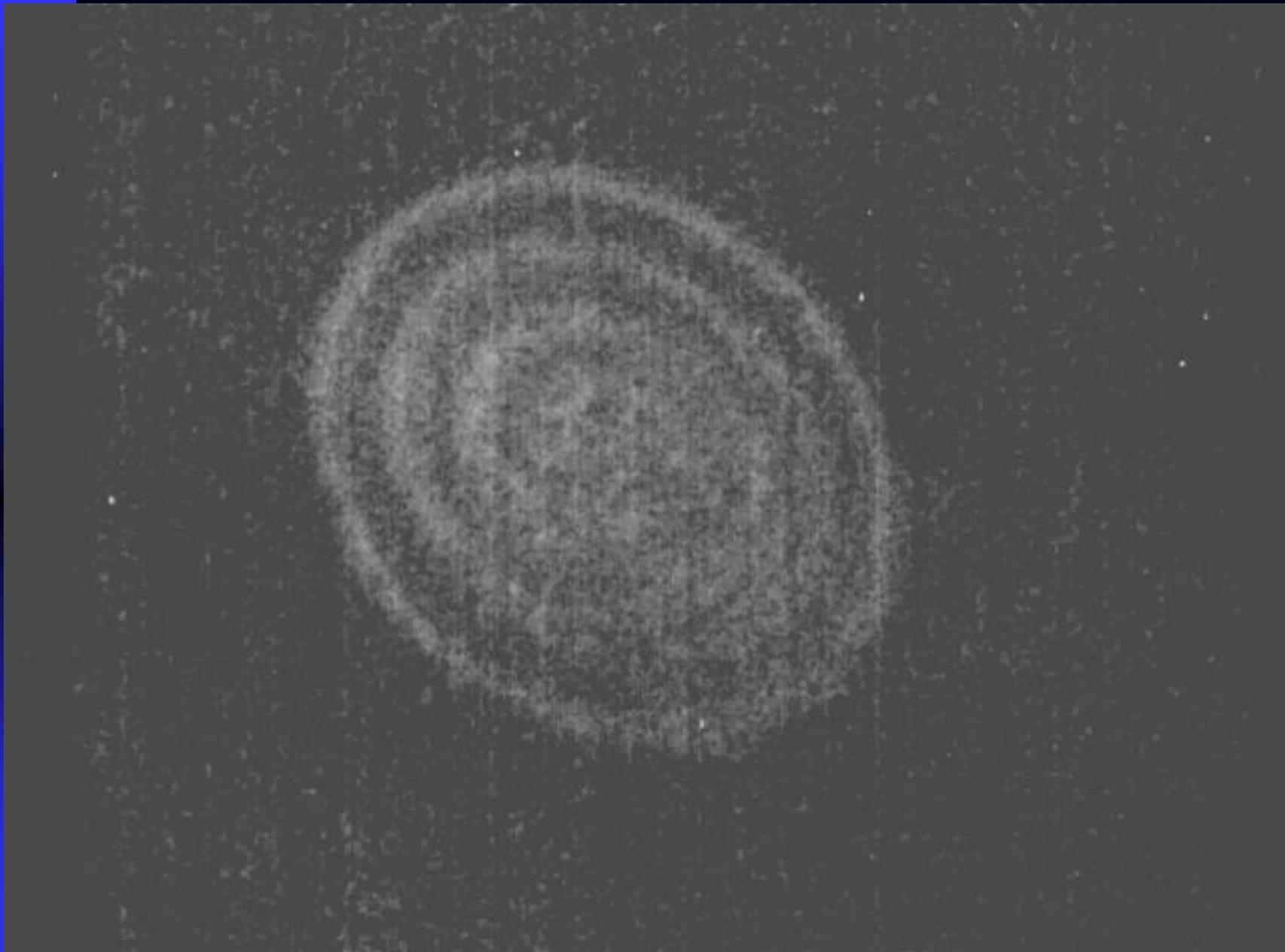


Rotating the structure inside the insert, Ne,
 $p=0.4$ tor, $a=1$ mkm, $B=(0.01-1)$ T.

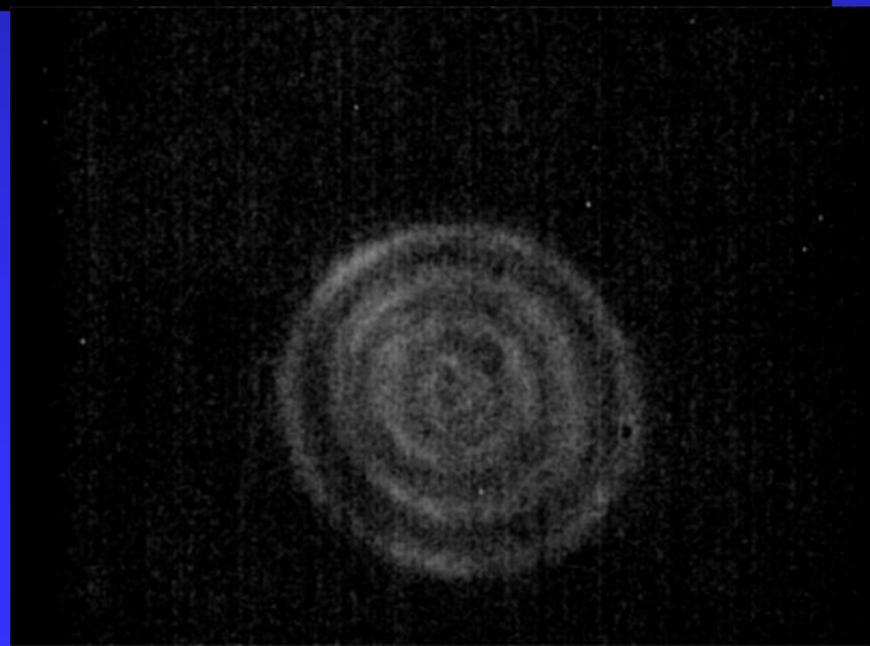
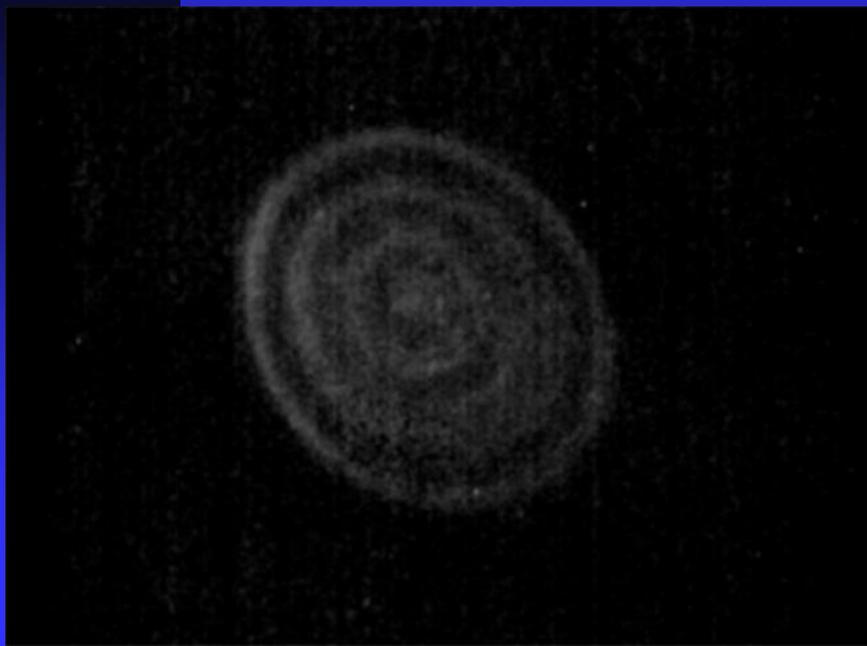
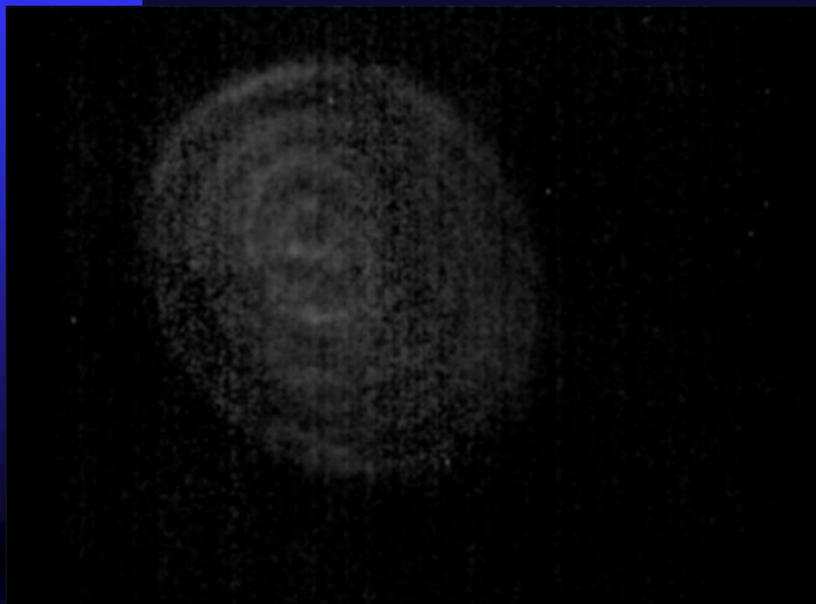


Dusty structures
in Ne under 15 рад/с



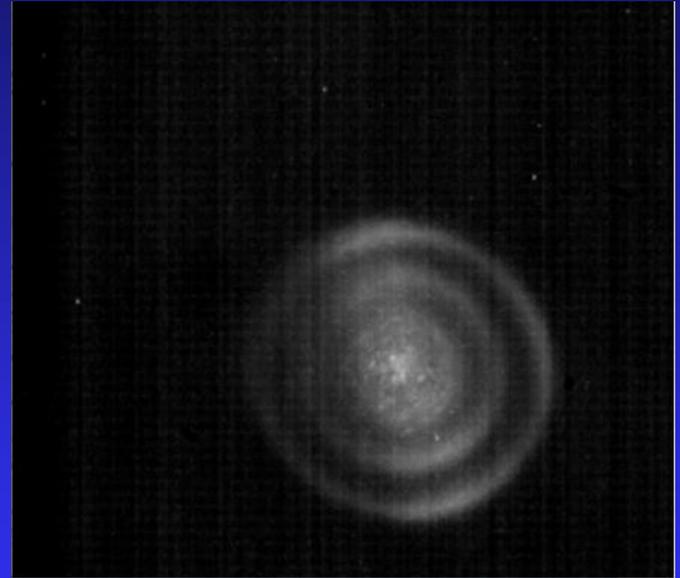
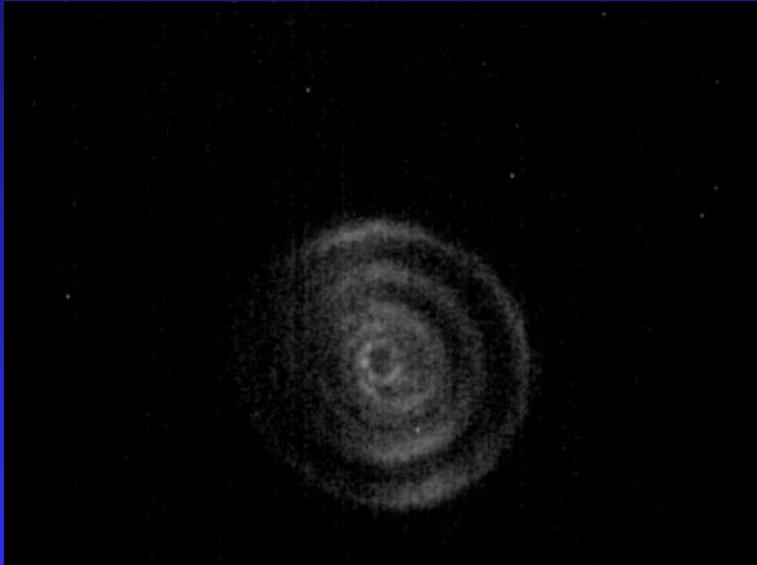


shell like structure: 1 T, 1.25 T, 1.5 T, 2 T



устойчивость круговых орбит

Наложение кадров за 30 секунд



Оптическое сканирование

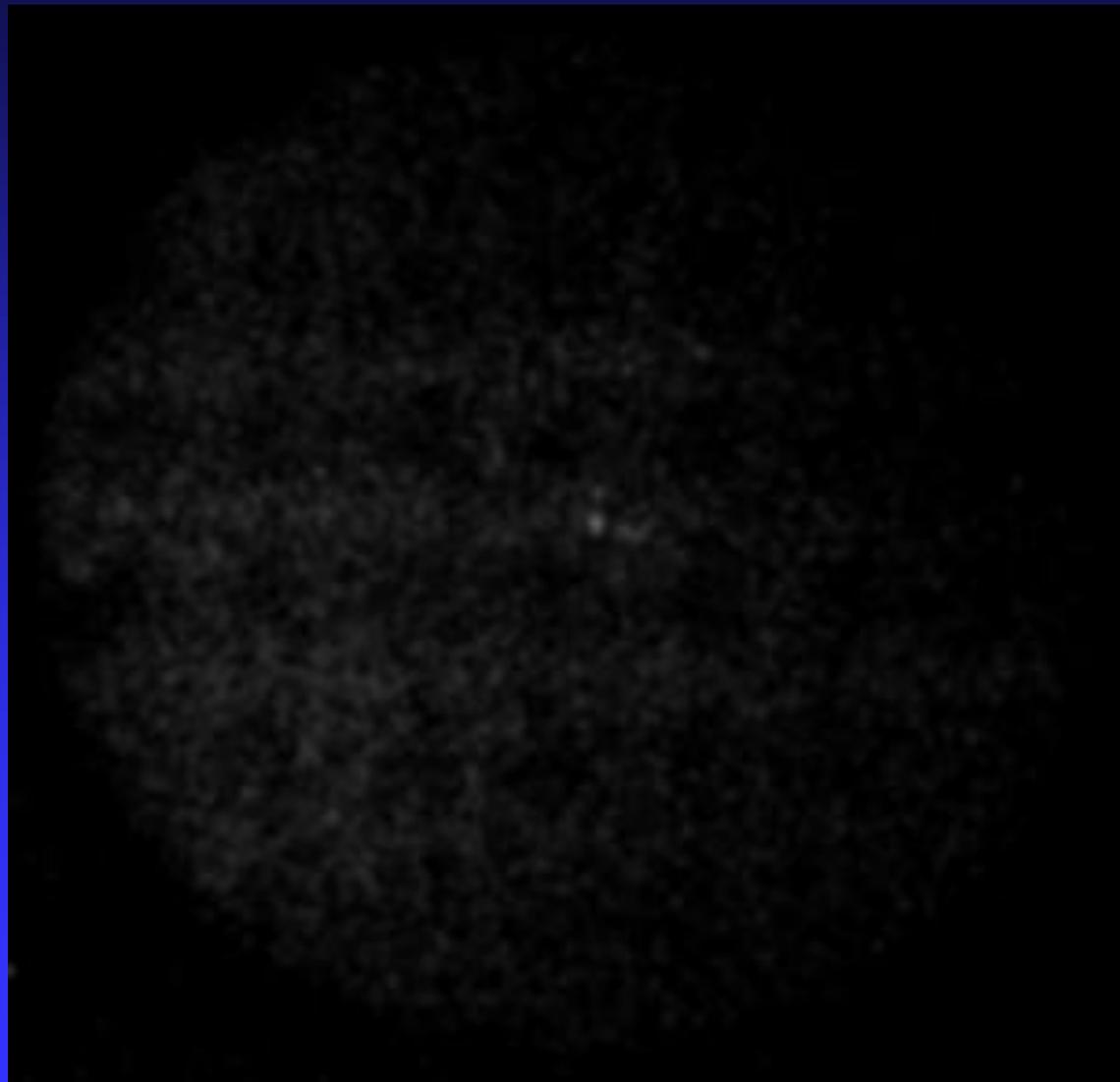
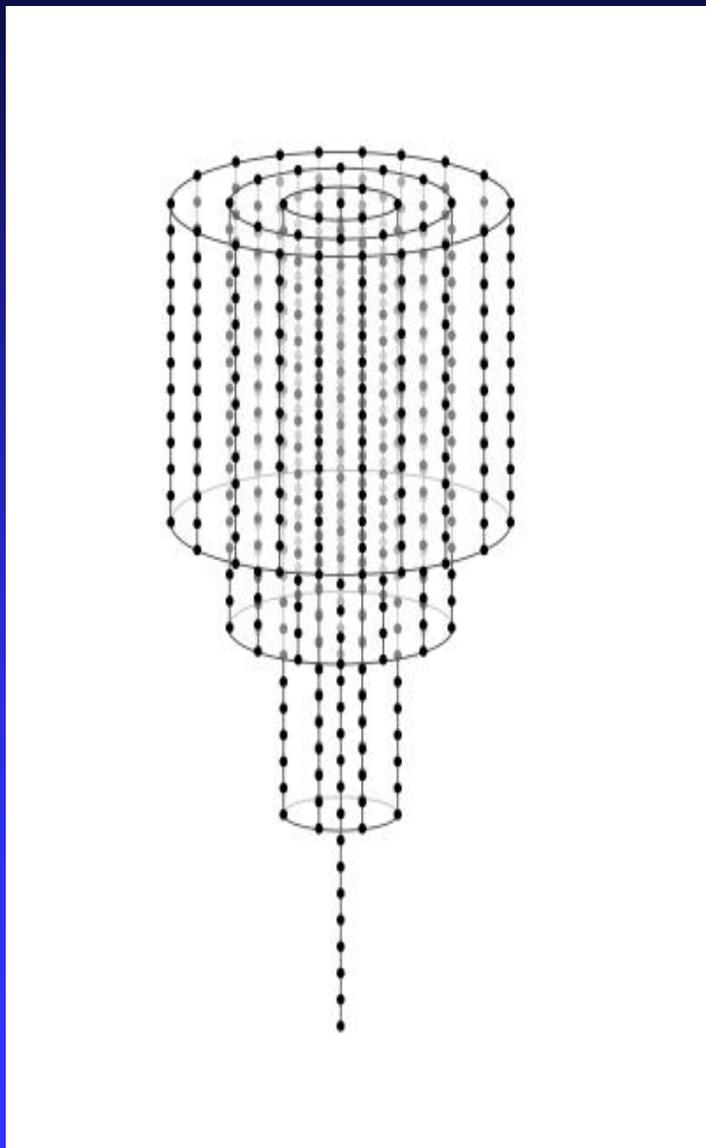
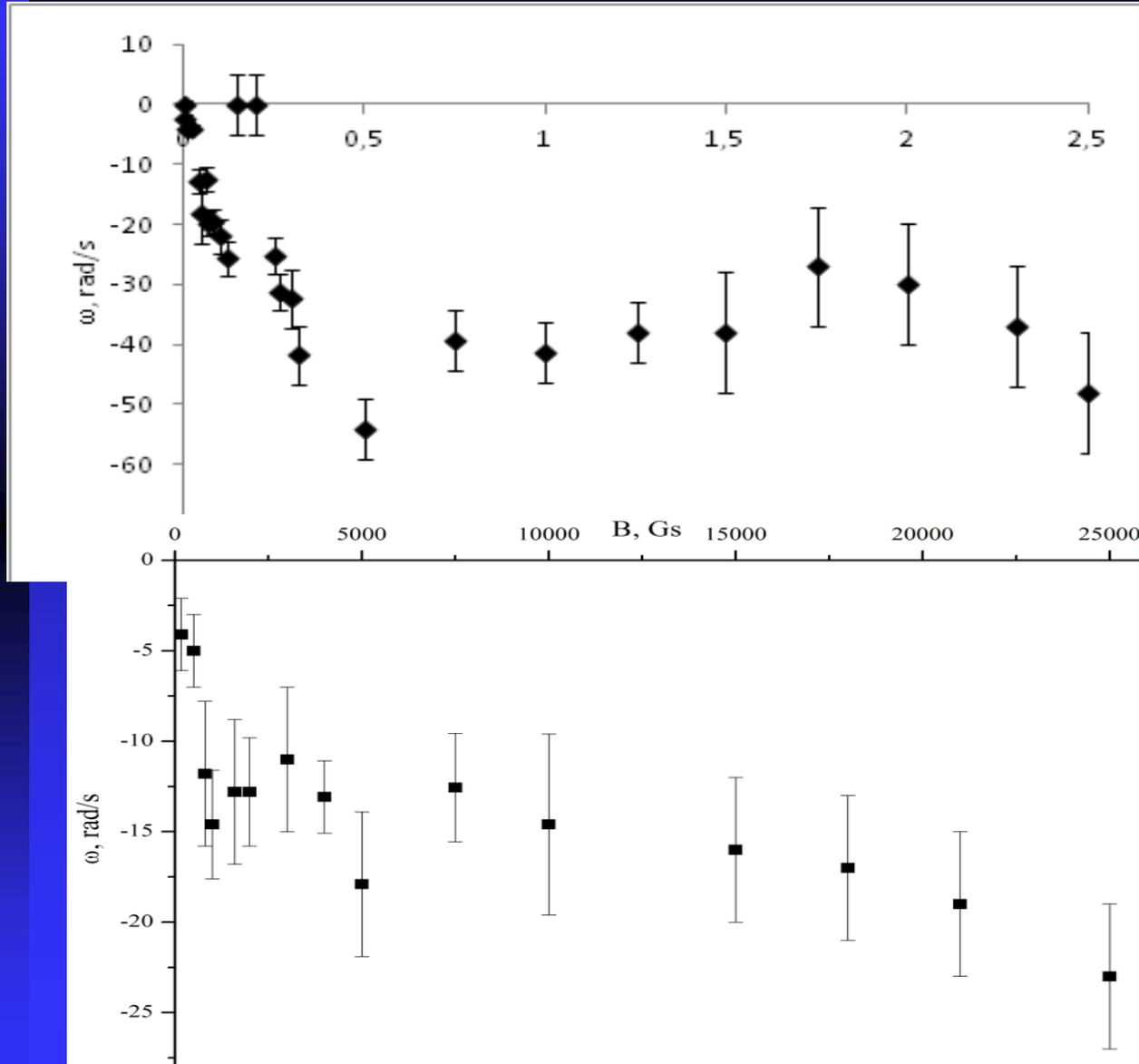


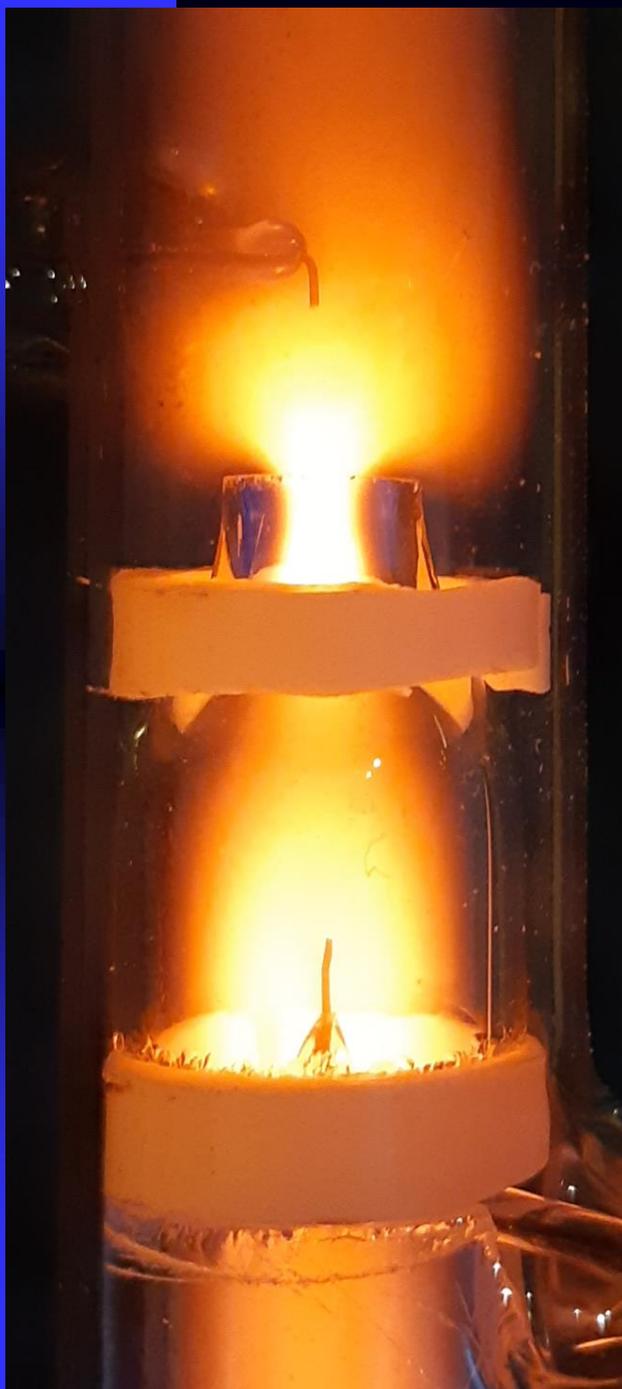
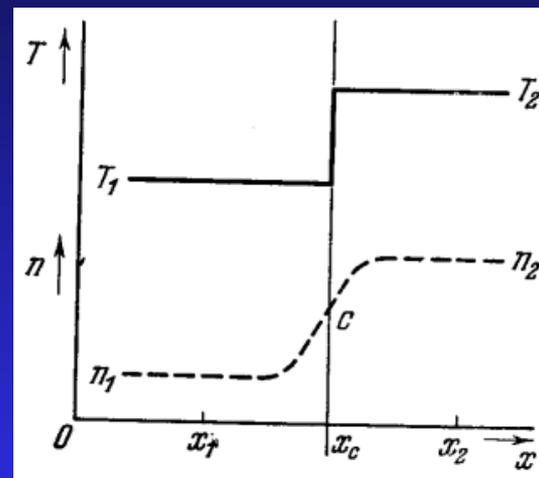
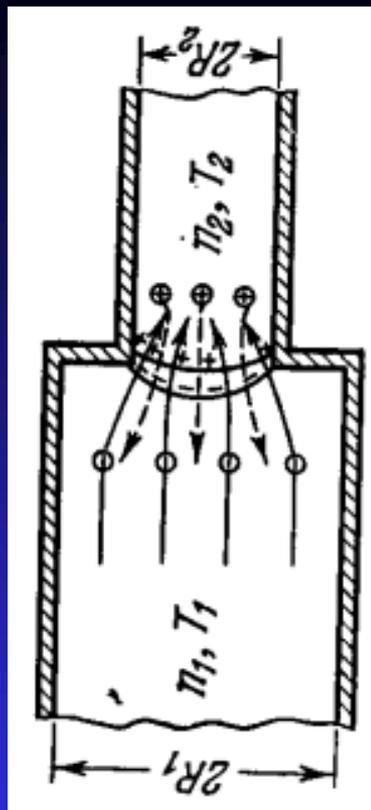
Схема оболочечной структуры



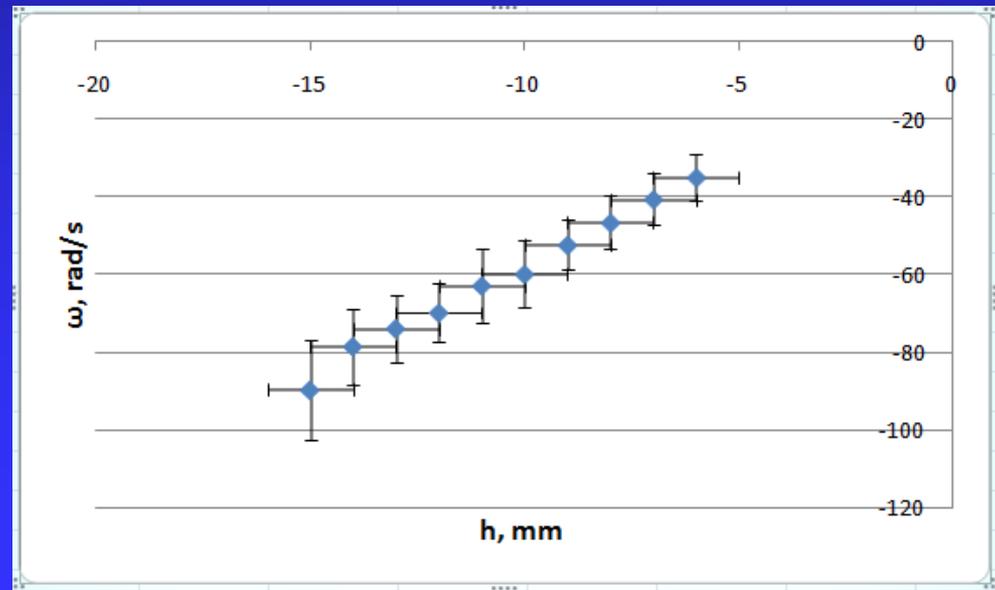
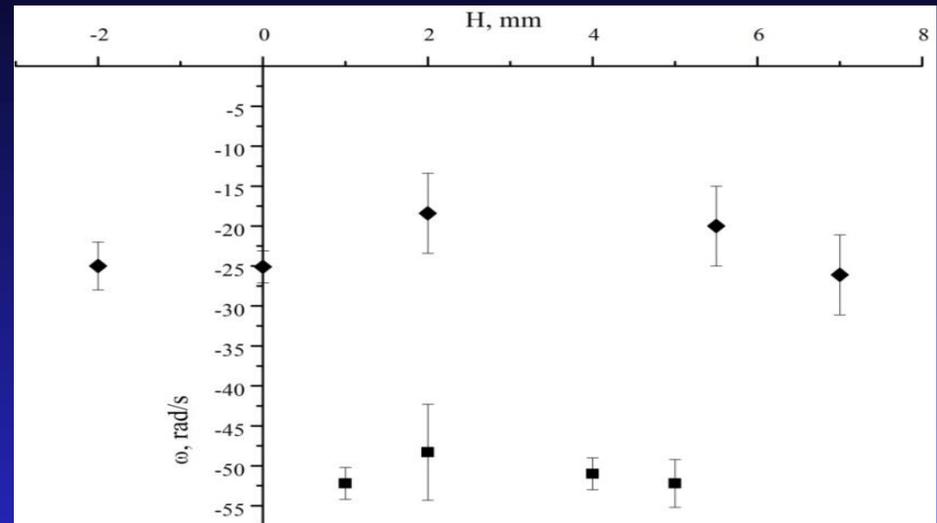
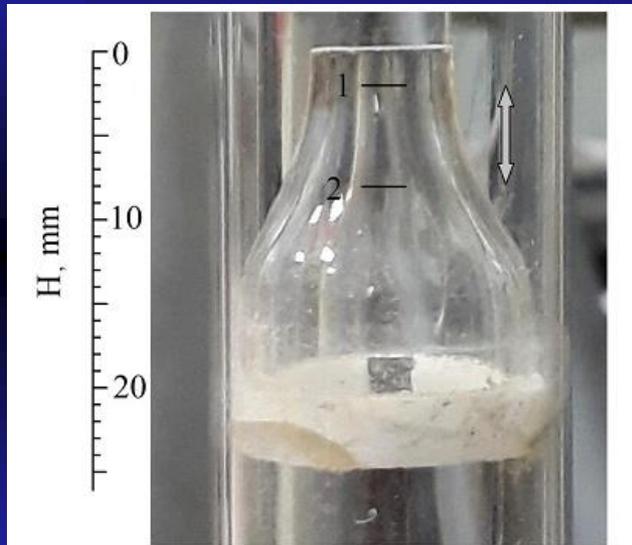
Trend $B > 1.5$ T Ne 0.4 tor, Ar 0.2 tor



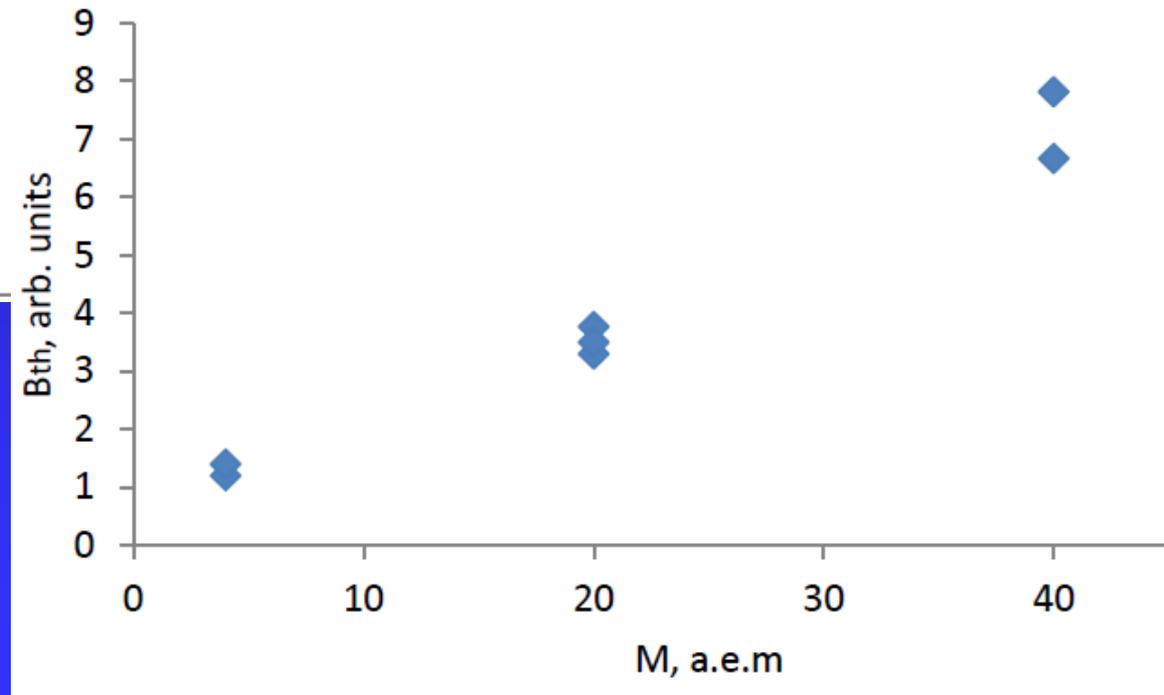
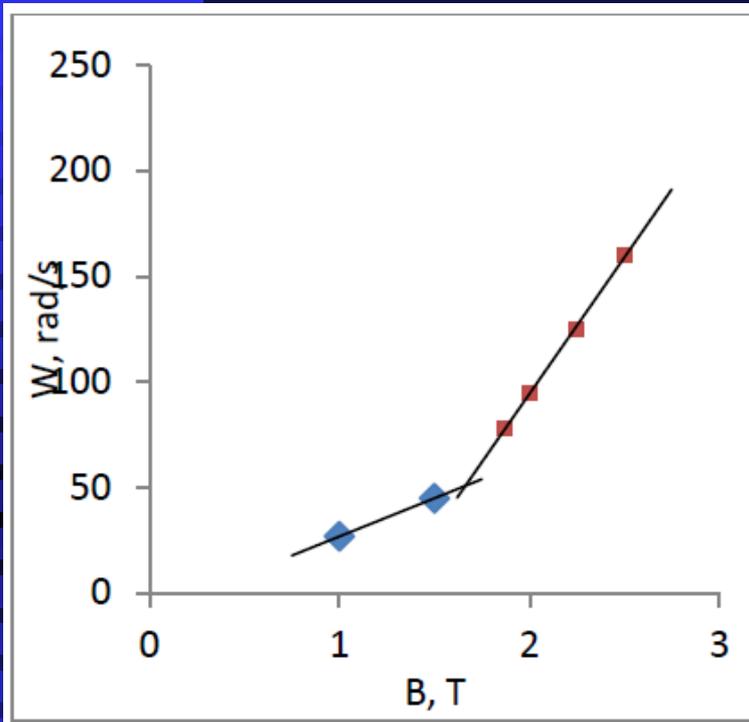
Вставка с зондами



rotary motion details, $B=2$ T



Изменение тренда угловой скорости



Thank you for attention!

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•St. Petersburg. Russia