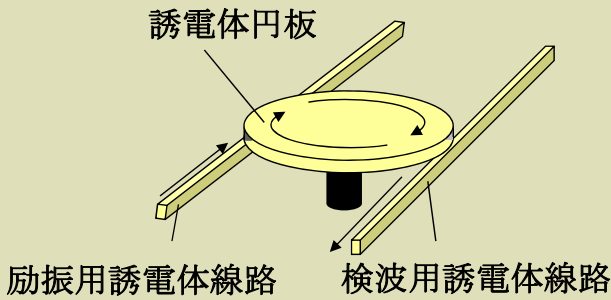
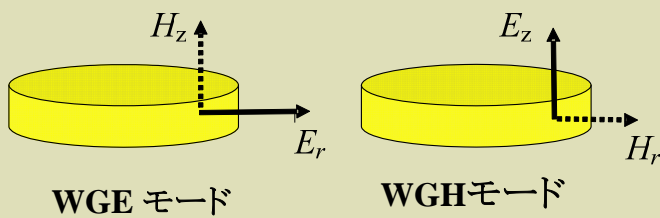


WGモード誘電体共振器を用いたミリ波応用

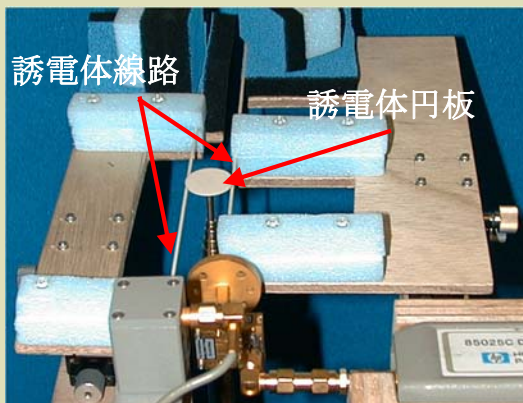
WGモード共振器法



(a) WGモード誘電体円板共振器



(b) 半径方向と軸方向の偏波



(c) 測定システム

比誘電率

$$\det H_{WGE}(f_{0,n,WGE}; \epsilon_r, \epsilon_z, h, n, D, L) = 0$$

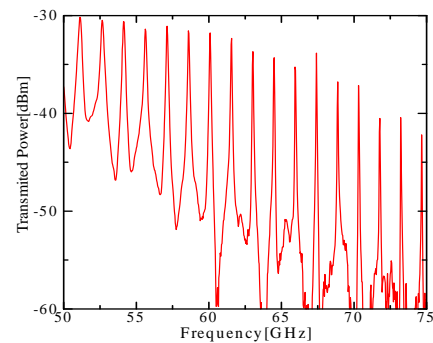
$$\det H_{WGH}(f_{0,n,WGH}; \epsilon_r, \epsilon_z, h, n, D, L) = 0$$

誘電正接

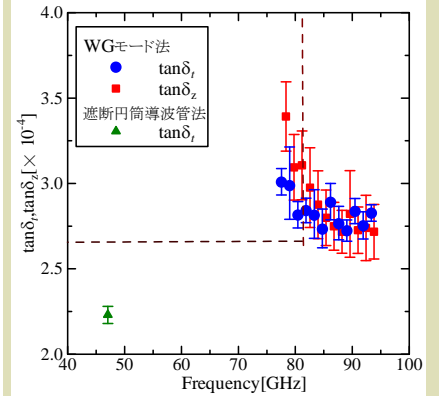
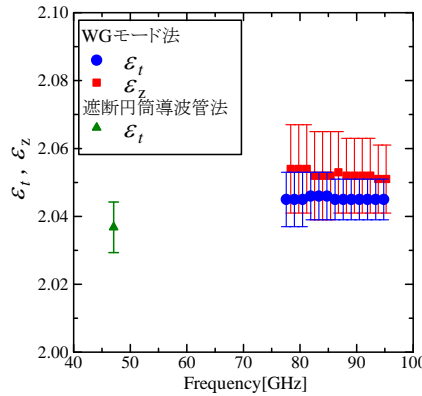
$$\tan \delta_t = \frac{1}{Q_{u,WGE}} \frac{f_{0,n,WGE}}{(-\Delta f_{t,WGE} / \Delta \epsilon_t) 2 \epsilon_t}$$

$$\tan \delta_z = \frac{f_{0,n,WGH}}{(-\Delta f_{z,WGH} / \Delta \epsilon_z) 2 \epsilon_z}$$

$$\times \left(\frac{1}{Q_{u,WGH}} - \tan \delta_t \frac{f_{0,n,WGH}}{(-\Delta f_{t,WGH} / \Delta \epsilon_t) 2 \epsilon_t} \right)$$

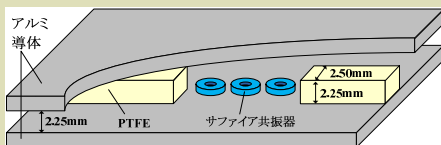


(d) 共振周波数

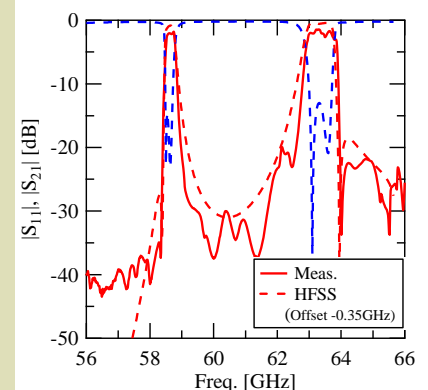
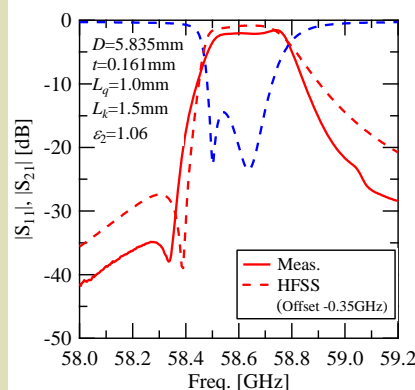


(e) PTFEの測定結果

NRDガイド励振WGモード共振器を用いた帯域通過フィルタ



(a) フィルタ構造



(b) 周波数特性