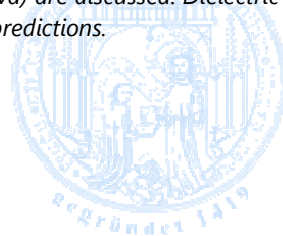


Membrane potentials induced by external rotating electrical fields.

Fuhr, G. R., Hagedorn, R., Glaser, R., Gimsa, J., Müller, T., 1987. *J. Bioelectricity* 6:49–69.

Abstract: *For electrorotation measurements of cell properties, cells are positioned in a rotating electric field, generated by a system of four electrodes. The membrane potentials induced by such fields were calculated for single-, two-, and three-shell models. This simulates the situation of cells like erythrocytes that contain a single membrane system, protoplasts with a vacuole, or plant cells covered by a cell wall. The influence of the outside field on cell organelles was also calculated. Differences between alternating and rotating fields are discussed. A measuring chamber was developed which allowed the production of rotating fields up to 40 kV/m. The effects of such fields on the rotational behavior of plant protoplasts (*Kalanchoe daigremontiana*, *Avena sativa*) are discussed. Dielectric breakdown of protoplasts induced by rotating fields is investigated to check the theoretical predictions.*

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