**Introduction:** Dielectrophoresis (DEP), an electric field driven technique, has important applications in the enrichment, concentration and isolation of particles. Recent studies shown a difference between the experimental and theoretical DEP force in a real system [1]. Although a correction factor is a common approach [2], its origin is still uncertain.

**Computational Methods:** The AC/DC module was used to estimate the distribution of the electric field, as well as the particle net velocity in a tampered channel (Fig.1) [1].

\[
v_x = \left( \mu_{\text{ek}} + \mu_{\text{dep}} \frac{\partial E}{\partial x} \right) E
\]

If the velocity is measured on the centerline and \( E \) varies increases linearly [1]:

\[
v_x = \left( y^2 k^2 \mu_{\text{dep}} + y k \mu_{\text{ek}} \right) x + \left( y^2 k^2 \mu_{\text{dep}} + y k \mu_{\text{ek}} \right)
\]

![Figure 1. \( E \) distribution in a tampered channel.](image)

**Results:** Numerical modeling was used to estimate the correction factor necessary to produce an inflection point in the velocity vs position plot.

**Conclusions:** Particle concentration affects the correction factor. Its relation will be studied to determine the contribution of particle interactions on the correction factor.

**References:**