# Generalized displacements FAQ

This page is devoted to **frequently asked questions** (FAQ) related to generalized displacements.

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## Can generalized displacements approximate joint rotations in a solid model?

Yes, this will work for a model consisting only of solid elements. Suppose the position vector from joint 1 to 2 is given by (dx, dy, dz). A generalized displacement of type *rotation* may be defined for rotation about the Z axis, then given as Rz = dx*dUy – dy*dUx. Coefficients which define generalized displacement for Joint 1 are then (dy, -dx, 0, 0, 0, 0), and for Joint 2, (-dy, dx, 0, 0, 0, 0).

If necessary, separate rotational generalized displacements can be defined for Rx and Ry. Once defined, plots and tabular output are available.

## Can generalized displacements calculate strain?

Yes, when element strain is not directly reported, strain values from joint displacements may be calculated using generalized displacements. This is done through the Define > Generalized Displacements menu.