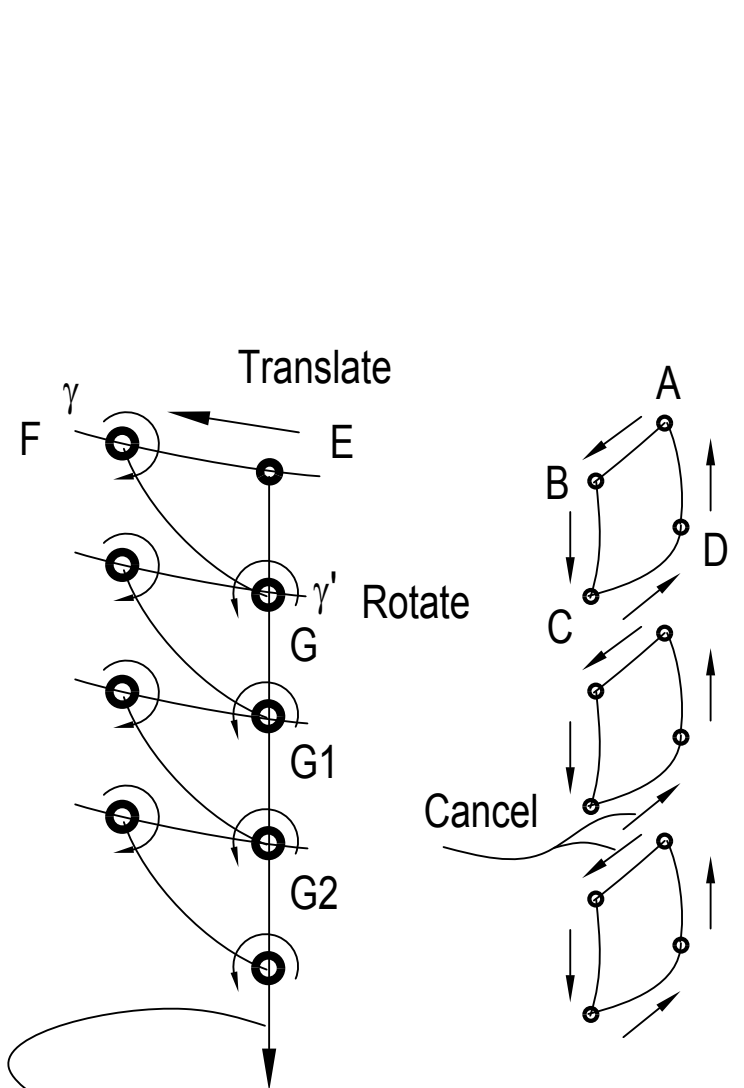
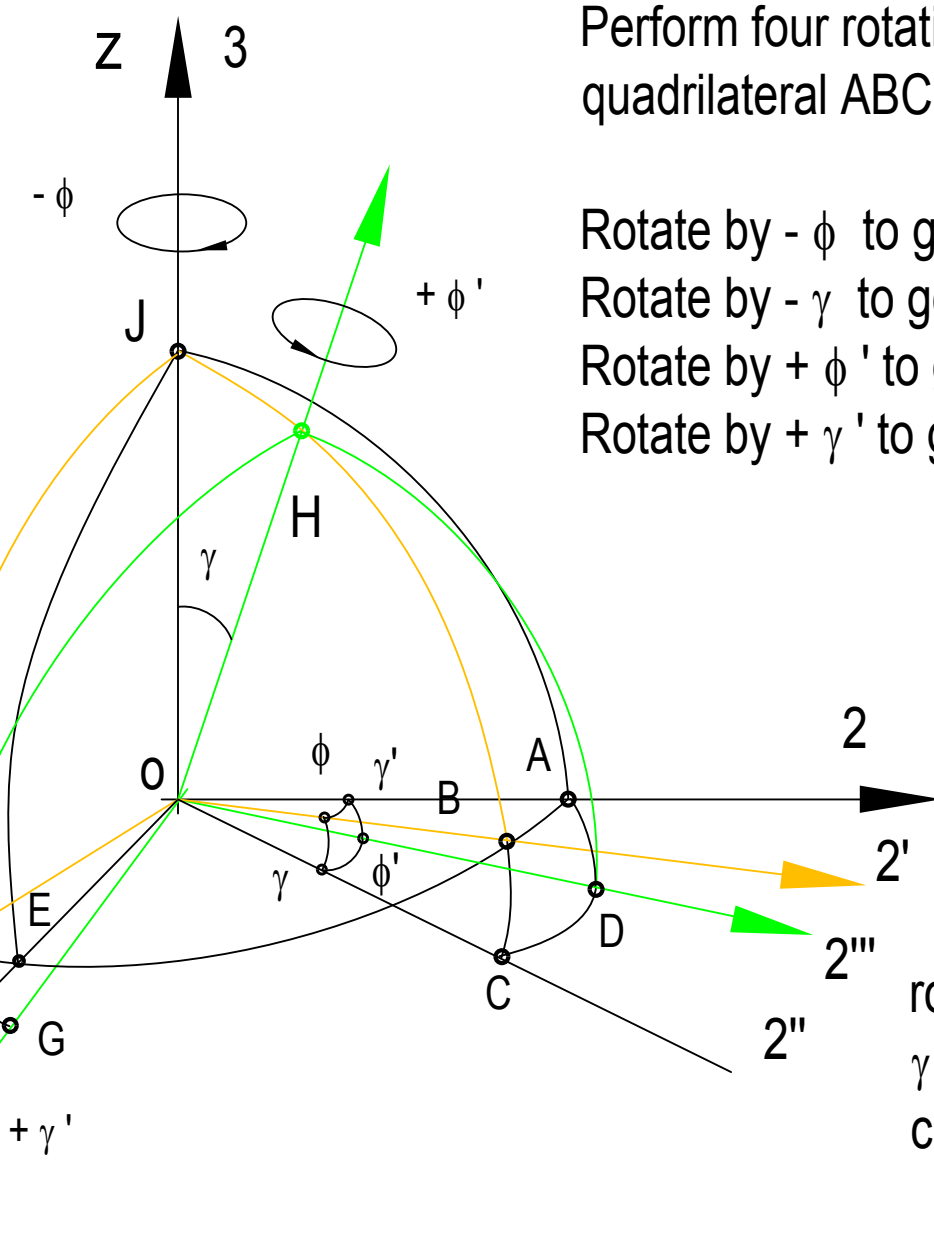
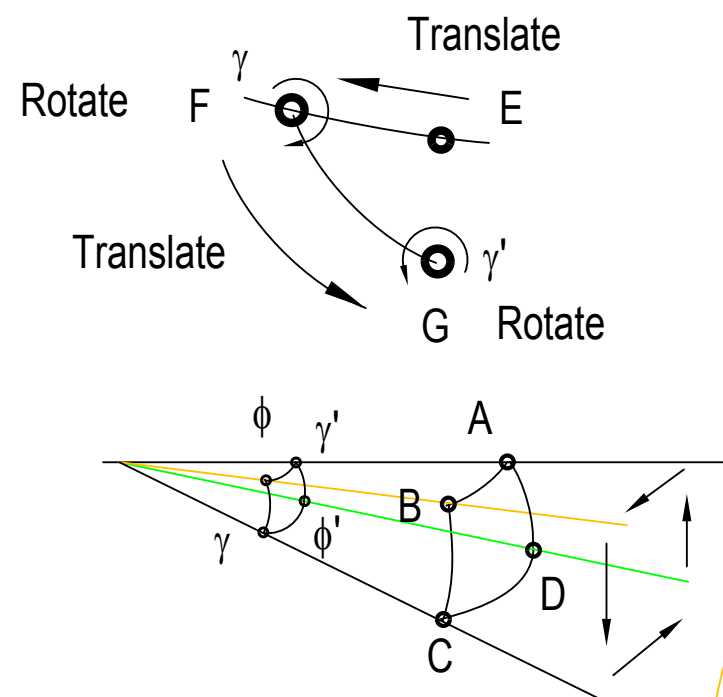


# Conversion of mechanical to electrical energy - Van De Graaff generator



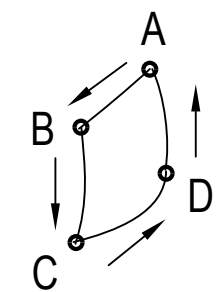
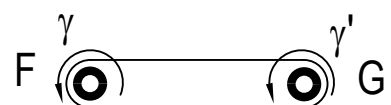
Translation on great arc JE from E on to G and downwards. This process with translation is dynamic. For a static process make a loop at FG and keep rotating about ABCD



Perform four rotations to obtain quadrilateral ABCD

- Rotate by  $-\phi$  to go from A to B
- Rotate by  $-\gamma$  to go from B to C
- Rotate by  $+\phi'$  to go from C to D
- Rotate by  $+\gamma'$  to go from D to A

rotation of the sphere by  $\gamma'$  about the 2-2 axis to create arc EG.



Static Loop

Perform four rotations to obtain quadrilateral ABCD on the sphere or translate from E to F, Rotate by  $-\gamma'$ , translate from F to G rotate by  $\gamma'$ .

The end result of all the rotation and translation operation, ( i.e.; from E to F to G ), starting at E and ending up at G is a rotation of the sphere by  $\gamma'$  about the 2-2 axis to create arc EG. So the rotation of the sphere by  $\gamma'$  about the 2 axis will create flow of energy from O outwards through ABCD. We can continue translating on the great arc JE, to G, G1, G2, etc., for larger rotations than