

## abc\_to\_dq0\_2.xbe

### Attributes

```
xbe name=abc_to_dq0_2 evaluate=yes
Jacobian: variable
input_vars: xa xb xc theta
output_vars: xd xq x0
aux_vars: c s
iparms:
sparms:
rparms:
stparms:
igparms:
outparms: xa xb xc xd xq x0
```

### Description

abc\_to\_dq0\_2.xbe employs the following equations to relate xa, xb, xc, theta to xd, xq, x0:

$$\begin{bmatrix} x_d \\ x_q \\ x_0 \end{bmatrix} = \frac{2}{3} \begin{bmatrix} \cos \theta & \cos(\theta - 2\pi/3) & \cos(\theta + 2\pi/3) \\ -\sin \theta & -\sin(\theta - 2\pi/3) & -\sin(\theta + 2\pi/3) \\ 1/2 & 1/2 & 1/2 \end{bmatrix} \begin{bmatrix} x_a \\ x_b \\ x_c \end{bmatrix}.$$

xa, xb, xc, xd, xq, x0 are made available as output variables.