## 1 Variables

## 2 physical

|    | var      | symbol | documentation | type  | units | eqs |
|----|----------|--------|---------------|-------|-------|-----|
| 10 | $r_{yN}$ | r_y    | y-coordinate  | frame | m     |     |
| 9  | $r_{xN}$ | r_x    | x-coordinate  | frame | m     |     |
| 11 | $r_{zN}$ | r_z    | z-coordinate  | frame | m     |     |

## 3 root

|   | var                  | symbol      | documentation              | type                     | units | eqs |
|---|----------------------|-------------|----------------------------|--------------------------|-------|-----|
| 8 | $S_{I,q}$            | S_Iq        | selection matrix ouput     | network                  |       |     |
| 3 | $F^{source}{}_{N,I}$ | F_NI_source | incidence matrix NI source | network                  |       |     |
| 5 | $F^{source}{}_{A,I}$ | F_AI_source | incidence matrix AI source | network                  |       |     |
| 4 | $F^{sink}{}_{N,I}$   | F_NI_sink   | incidence matrix NI sink   | $\operatorname{network}$ |       |     |
| 6 | $F^{sink}{}_{A,I}$   | F_AI_sink   | incidence matrix AI sink   | $\operatorname{network}$ |       |     |
| 7 | $S_{I,p}$            | S_Ip        | selection matrix input     | $\operatorname{network}$ |       |     |
| 2 | $F_{N,A}$            | F           | incidence matrix           | network                  |       |     |
| 1 | t                    | t           | time                       | $_{ m frame}$            | s     |     |

4 Equations