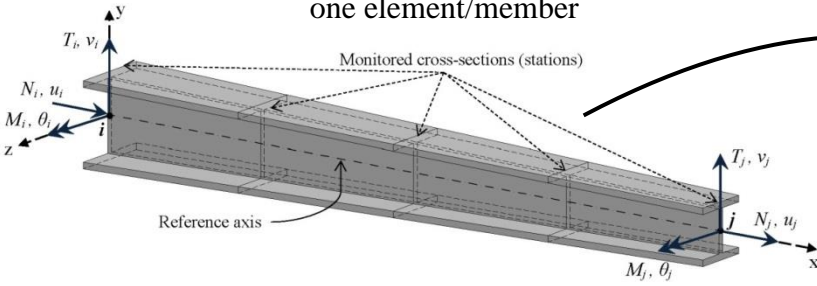


Power series approach

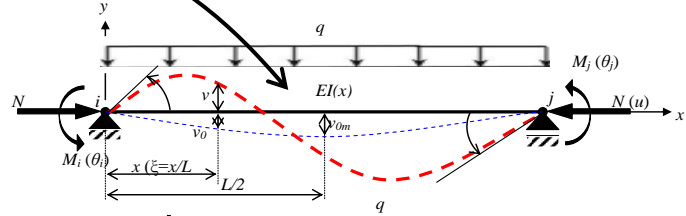
Maxwell-Mohr method

### A novel second-order flexibility-based tapered Timoshenko-Euler element is proposed

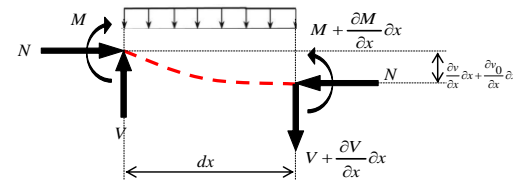
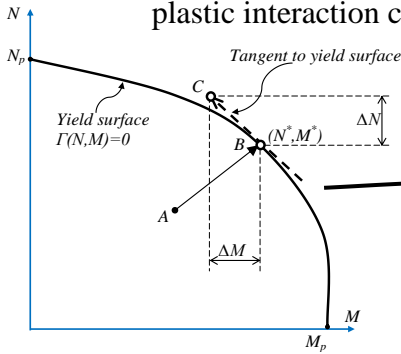
Material nonlinear effects simulated by one element/member



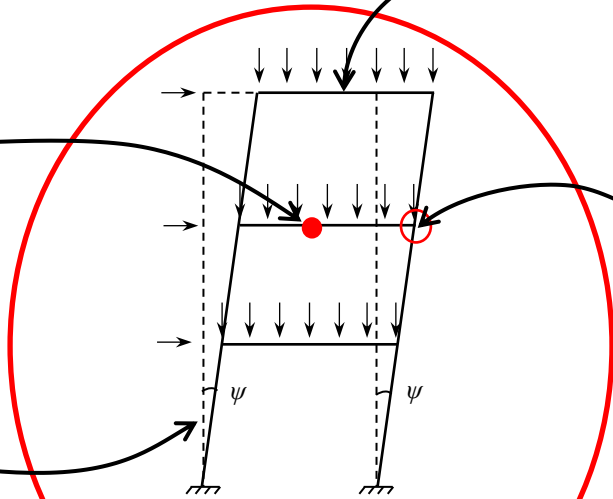
Efficient modelling of initial geometric imperfections and distributed loads



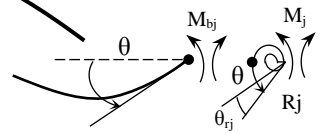
A procedure to enforce the force-point movement to remain on the plastic interaction curve



Geometrical nonlinear local and global effects

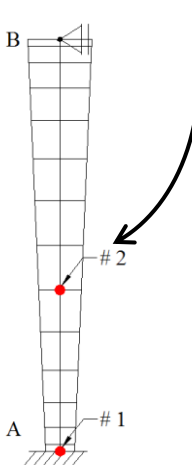


Flexible connections behavior

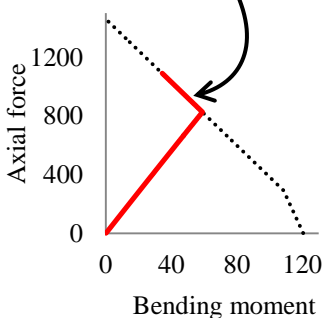


### Nonlinear analysis method of steel frames with tapered members

Detection of position of plastic hinge development inside the element length accordingly with the assumed numerical integration scheme



Yield criterion is satisfied after plastic hinge is formed



Stiffness degradation of the elements

