Discussion

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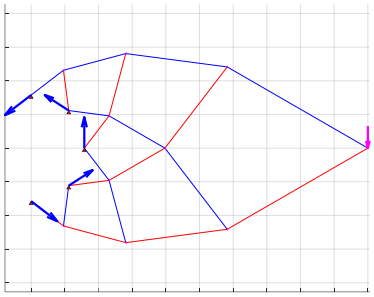
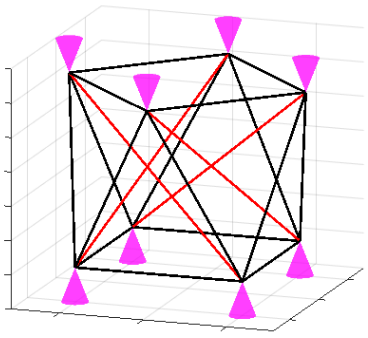
1. Michell Truss of order 4



   A. The structure isn't potentially inconsistent, and the system is stable where the force is downward. No soft modes in the structure.
   B. The structure isn't undetermined, and the solution is unique. No bars are under tension. No pretensioning.

   The structure is horizontally symmetric. When the force is downward, the red lines in the figure indicate bars, and the blue are strings. However, when the force is upward, this relationship inverses.

2. Nonminimal Prism of 4 bars



   The twist angle is pi/4, and the height is 1.

   A. The structure is potentially inconsistent, implying the presence of soft modes, or instability. Some strings not under tension. Soft modes involve deformations caused by external forces or loadings. Even small external forces can lead to the failure of structure. More strings or fixed points should fix the problem.
   B. The structure is undetermined with 3 DOF. In static equilibrium, the system has 3 fewer independent equations than the unknowns. Also, it indicates the ways to pretension the structure. The structure is not pretensionable.

   When the twist angle is larger than pi/4, the system is still is underdetermined with 3 DOF, but not nonpretensionable until the angle reaches pi/2. No bars are under tension, and the 16 strings are all under tension with tau_min=0.1. The height of the structure doesn't affect the solution.