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Stability of a bounded axisymmetric liquid bridge THOMAS WARD, Iowa State University — This talk examines the stability of a bounded axisymmetric liquid bridge confined between parallel-planar similar substrates by using theory. From classical stability analysis it is now generally understood that stability diagrams for bounded liquid bridges contain; a region of low slenderness where instability is caused by de-pinning; a region of low to large slenderness and small liquid bridge volume where axisymmetric minimum volume instabilities occur; and a low to large slenderness region with large liquid bridge volume where non-axisymmetric maximum volume instabilities are present. Zero-capillary pressure solutions to the Young-Laplace equation for bounded-axisymmetric liquid bridges are analyzed, and their transition, as stability limits. Observable trends show good agreement for critical behavior when comparing experiments and theory in the near hydrostatic limit.

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