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# Steady Conjugate Heat Transfer of Two Connected Thermal Systems

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**Abstract :** An analytic approach is obtained for the steady heat transfer problem of two fluid systems, in thermal communication via heat conduction across a solid wall separating them. The two free convection layers created on wall sides are assumed to be in parallel flow. Fluid-solid interface temperature on wall sides is not prescribed in analysis in advance; rather, determined from conjugate solution among other unknown parameters. The analysis highlights the main conjugation parameters controlling thermal interaction process of involved heat transfer modes. Heat transfer results of engineering importance are obtained.

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