Interpretation of Thompson's Mechanism for Venus' Atmospheric Super-Rotation and its Extension to the Spherical Geometry.

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   Thompson's mechanism for Venus' atmospheric super-rotation is reconsidered in a two-dimensional plane. It is shown that a mean shear flow can be generated by the positive feedback of a mean shear flow, tilting convective motion and tilting temperature distribution.

   In order to examine the validity of Thompson's mechanism on the non-rotating and rotating spheres, a three-dimensional numerical model is constructed. Steady solutions which represents convection between the day and night sides on the sphere, are obtained for various values of parameters, and their stability is examined. It is shown that convection on the non-rotating and rotating spheres is stable and a mean shear flow cannot be generated.