We report the feasibilities for revealing and diagnostics of unconventional phase singularities into optical fields, namely, the singularities of spatial coherence functions into partially coherent vortex beams. It is shown that the vortices of the spatial coherence function are comprehensively diagnosed through the strip version of the Thomas Young's interference experiment. Namely, the magnitude of a topological charge and its sign are determined, respectively, by the magnitude and the direction of bending of the Young's interference fringes, which are produced by the edge diffraction waves from the rims of an opaque strip positioned in the vortex beam. Such experiment provides complete data on the azimuthal behavior of a phase of the spatial coherence ftmction. On the other hand, non-localized ring singularities of the spatial coherence function and of the complex degree of coherence occurring in the radial distribution of a phase are detected through conventional Young's interference experiment with two pinholes at an opaque screen. It is remarkable that the last of the mentioned coherence phase singularities takes place, when amplitude zeroes of the field are absent. Instead of this, the modulus of the complex degree of coherence vanishes alone.
Keywords: singular optics, partial coherence, Young's interference experiment

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