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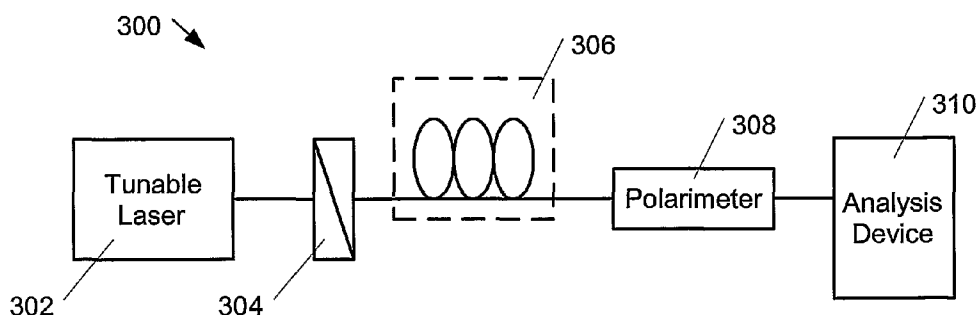
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(54) Title: DIFFERENTIAL GEOMETRY-BASED METHOD AND APPARATUS FOR MEASURING POLARIZATION MODE
DISPERSION VECTORS IN OPTICAL FIBERS



(57) Abstract: A method and apparatus are provided for determining the first and second order polarization mode dispersion (PMD) vectors of an optical device, such as a single mode optical fiber, using only a single input polarization state. This is achieved by passing light beams having a fixed polarization state and frequencies that vary over a range through the optical device that is being tested. The output polarization states of the light beams that have passed through the optical device are measured, and used to form a curve in Stokes space on a Poincare sphere. The shape of this curve is used to approximate the first and second order (and possibly higher order) PMD vectors, using formulas based on differential geometry.

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