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SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	**Physical Review & Research International**
Manuscript Number:	**2013_PRRI_6837**
Title of the Manuscript:	**Geometric Phase, Curvature, and the Monodromy Group**

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	**Authors' response to final evaluator's comments**
The abstract should reflect the aim, methodology, results and conclusion but these should not be put as subtitles in the abstract. I just advised you to add more information on results. Let it appear as follows. The aim of this study is to show that geometric phase is a consequence of curvature in non-Euclidean geometries, being related to the areas of spherical and hyperbolic triangles. In hyperbolic geometry it is well-known that the angular deficit of a hyperbolic triangle is related to Wigner rotation and Thomas precession, whereas in spherical geometry, its relation to automorphic functions arising from Fuchsian differential equations containing non-essential singularities has not been appreciated. It is the aim of this paper to fill this lacuna. Fuchsian differential equations with non-essential singularities are solved by a power series solution (indicial equation) and the quotient of two solutions will undergo linear-fraction transformations which tessellate the half-plane or unit disc with curvilinear triangles or lunes depending on the number of singular points. Their inverse aremultivalued, periodic, or automorphic, functions. Analytic continuation about a singular point does not give back the original solution. Multivaluedness is the cause of geometric phase. Examples are: the Pancharatnam phase of beams of polarized light, the Aharonov-Bohm effect, the Dirac monopole, and angular momenta with 'centripetal' attraction in the case of spherical geometry. These will be compared with non-collinear Lorentzian boosts that are responsible for Wigner rotation and Thomas precession in hyperbolic geometry, where the angle defect is related to the Euclidean measure of hyperbolic distance of two sides of a hyperbolic triangle in velocity space. For a right hyperbolic triangle, the angular defect isthe angle of parallelism. A finite geometric phase requires non-integral quantum numbers, and, thus cannot be associated with 'particles.' By conformal transformation, the homologues of the poles can be transformed into vertices of lunes, curvilinear triangles, and polygons which place restrictions on the range of angular momenta. In contrast to quantum mechanics, where space is continuous and quantum numbers discrete, the space is now discrete, made up of tessellations which are repetitions of the fundamental region without lacunae and without overlap, and the interval of the quantum numbers is continuous. Many of the equations of mathematic physics can be reduced to second-order Fuchsian equations with real coefficients in the limit of vanishing kinetic energy where essential singularities are reduced to simple poles. For only then will the solutions to the differential equations be rational functions in order that the covering group will be cyclic, and the covering space will be a 'spiral staircase, like the different leaves of a Riemann surface.	

Note: Anonymous Reviewer