

## **A note on the characteristic properties of geodesic sub- $(\alpha, b, s)$ -preinvex functions**

### **ABSTRACT**

In the present paper, we investigate the properties of geodesic sub- $(\alpha, b, s)$ -preinvex functions on Hadamard manifolds and establish some basic properties in both general and differential cases. Furthermore, we explored sufficient conditions of optimal solutions and proved some new inequalities under geodesic sub- $(\alpha, b, s)$ -preinvexity.

**Keyword:** Preinvex; Geodesic; Riemannian manifolds; Hadamard manifolds