

Medial Axis Analysis of Valles Marineris

Authors : Dan James

Abstract : The Medial Axis of the Main Canyon of Valles Marineris is determined geometrically with maximally inscribed discs aligned with the boundaries or rims of the Main Canyon. Inscribed discs are placed at evenly spaced longitude intervals and, using the radius function, the locus of the centre of all discs is determined, together with disc centre co-ordinates. These centre co-ordinates result in arrays of x, y co-ordinates which are curve fitted to a Sinusoidal function and residuals appropriate for nonlinear regression are evaluated using the R-squared value (R²) and the Root Mean Squared Error (RMSE). This evaluation demonstrates that a Sinusoidal Curve closely fits to the co-ordinate data

Keywords : medial axis, MAT, valles marineris, sinusoidal

Conference Title : ICEPS 2023 : International Conference on Earth and Planetary Sciences

Conference Location : London, United Kingdom

Conference Dates : July 24-25, 2023