

Interpreting of Fault Activation with New High Resolution Digital Elevation Model with Himalayan and Azad Kashmir

Keywords: Rawalakot; Chitral; Gilgit; Valley; Earthquake

Introduction

The study area is situated in the South Himalayas, which is a tectonically active region. The study area is bounded by the Main Boundary Thrust (MBT), the Salt Range Thrust (SRT), and the Baramulla Fault (BBF). The study area is also bounded by the Karakoram and the Sulaiman Range.

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Stratigraphy

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Murree formation

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Figure 6: Photograph shows sandstone and clay of Chingi formation near Panjera, Coordinates 73°46'51" E, 33°35'11" N.



Figure 7: Photograph shows massive sandstone in Nagri Formation near Holar, coordinates 73°36'55" E, 33°35'20" N.



Figure 8: Photograph shows volcanic clast in Nagri Formation near Holar, coordinates 73°38'35" E, 33°37'14" N.

Nagri formation

L... N...
 S... C... P... 10... I... N...
 F... (F... 7).
 C... F... A... H...
 D... P... F... N... F... (F... 8).
 E... P... N... F... 8.

Dhok pattan formation

S... C... P... D...
 P... F... L... 10... I... D...
 P... F... H... D... P...
 F... N... F... (F... 9).
 D... P... F...
 D... P... F... N... F...
 S... F... D... P... F...
 E... M... P... P... 11.

Structure

M... S... H... (F... 10... T... 1).

Faults

I... P... E... P... H... 12... I...
 E... R... F... P... F... G... B... F...
 C... F...

Riasi fault:

>60... R...
 200... B... -B...
 P... I... 13... I... R... F...
 M... (F... 11)
 M... A... N... P...
 S... I... NE... K... F...
 F... M... F... (F... 12). I... M...
 F... K... P...
 (F... 11).
 B...



Figure 9: Photograph shows soft and friable sandstone of Dhok Pathan formation near Holar, coordinates 73°37'40" E, 33°36'06" N.

Palandri fault: Palandri Fault (P.F.) is a major fault in the Himalayan region. It is a normal fault with a strike-slip component. The fault is oriented N60°W/68°NE. It is a right-lateral strike-slip fault. The fault is 12-13 km long. (Figure 12-13).

Godri Badshah fault: Godri Badshah Fault (G.B.F.) is a major fault in the Himalayan region. It is a normal fault with a strike-slip component. The fault is oriented N41°W/62°NE. It is a right-lateral strike-slip fault. The fault is 14 km long. (Figure 14).

Chhechhan fault: Chhechhan Fault (C.F.) is a major fault in the Himalayan region. It is a normal fault with a strike-slip component. The fault is oriented N41°W/62°NE. It is a right-lateral strike-slip fault. The fault is 15 km long. (Figure 15).

Methodology

Digital Elevation Model (DEM) is used to interpret the fault activation.

United States Geological Survey (USGS) (http://www.usgs.gov/). Preparation of DEM from SRTM DEM using GIS. *Journal of Earth System Science*. 116: 102-110.

F. Preparation of 3D A. GIS. 10.2 (F. 16).

Discussion

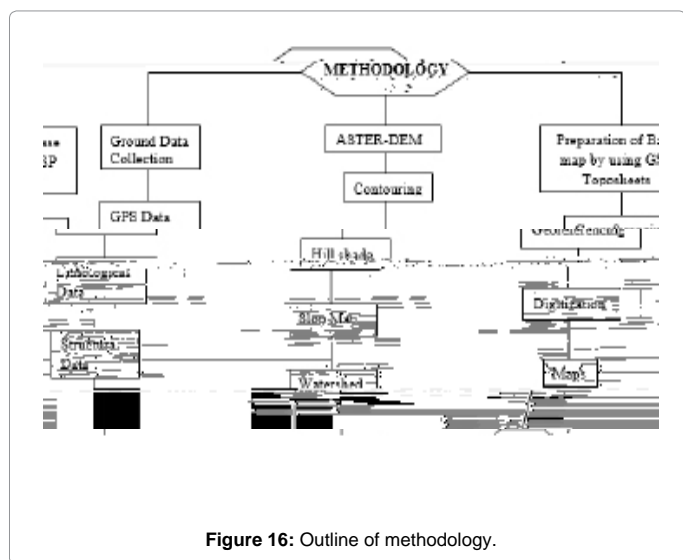


Figure 16: Outline of methodology.

Folds	Attribute of Bedding		Plunge and Trend of Fold Axis	Attitude of Axial Plane	Intern Limb angle	Type of Fold
	Northeastern Limb	Southwestern Limb				
Androt Syncline						Open
Mangriat Anticline						Open
Namb Peprian Syncline	Northwestern Part					Gentle
	Southwestern Part					Gentle
Palandari Anticline	Northwestern Part					Open
	Southwestern Part					Gentle
Dardarchh Syncline	Northwestern Part					Gentle
	Southwestern Part					Open
Chhechhan Anticline						Open
Holar Syncline						Gentle

Table 1: Folds in research area.

