

**ABRUPT PRECIPITATION CHANGES IN THE NORTHEAST AND
NORTHWEST HIMALAYA DURING THE LAST MILLENNIUM
USING PROXY RECORDS FROM LAKE AND CAVE DEPOSITS**

By

SOM DUTT

WADIA INSTITUTE OF HIMALAYAN GEOLOGY
DEHRADUN

Submitted



**IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF
THE DEGREE OF DOCTOR OF PHILOSOPHY**

TO

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

DEHRADUN

AUGUST, 2017