



## **Raman spectra of probably shock-metamorphosed zircon in structures of the Kola Peninsula**

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Zircon crystals were studied by means of Raman spectroscopy from certain structures of the Kola Peninsula, for which impact events are expected according to geological and geochemical data: circular structure in Javrozersky area of the Tanaelv belt and granophyres of Jarva-Varaka layered massif of the Monchegorsky ore district. Zircons from anorthosites of the Javrozersky area showed some features of impact zircons: wavy extinction, blurred "aurora-like" CL image and a presence of additional bands in the Raman spectrum, which may indicate the presence of  $ZrSiO_4$  with the scheelite-type structure (reidite) surrounded by zircon material. Zircon crystals of Yavra-Varaka granophyres showed variation of Raman spectra from the core part of crystals with typical zircon Raman pattern to complete absence of spectral bands in the marginal parts and rims. There was also a transition zone between cores and marginal parts of crystals, where the Raman spectrum is "blurred". Such pattern may be associated with the transformation of crystalline zircon to diaplectic glass under the influence of shock metamorphism, since the Jarva-Varaka massif according to geological and geochemical data is compared with the Sudbury structure, for which impact origin is assumed.

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