



Discipline Information

The following dates are in (dd/mm/yyyy) format.

Code: GSA5855 - 2 Type: POS
Name: Optically Stimulated Luminescence (OSL) dating of sediments
Concentration area: Geotectônica (44141)

Approval dates:

CCP: 26/09/2012 CPG: 27/09/2012 CoPGr:

Activation date: 06/10/2016 Inactivation date:

Workload:

Total: 60 h Theory: 10 h Practice: 10 h Study: 10 h

Credits: 4 Duration: 2 weeks

Professors: 2245960 - Andre Oliveira Sawakuchi - 27/09/2012 until today

Content:

The luminescence phenomena. Thermoluminescence (TL) and optically stimulated luminescence (OSL). TL and OSL of quartz and potassium feldspar. TL and OSL sensitivity. Equivalent dose, dose rate and age. The single-aliquot regenerative dose (SAR) protocol for equivalent dose estimation. Dose rate determination. Protocols for dating of quartz and potassium feldspar. Extending the age range of luminescence dating. Geological applications of luminescence sensitivity. Recent advances in luminescence dating. Equipments for luminescence measurements and gamma rays spectrometry. Sampling and sample preparation. Luminescence and gamma spectrometry measurements. Data analysis for age calculation.

Bibliography:

Aitken, M.J. 1998. An Introduction to Optical Dating, Oxford University Press, Oxford. McKeever, S.W.S. 1985. Thermoluminescence of Solids, Cambridge University Press, Cambridge. Buylaert, J-P., Jain, M., Murray, A.S., Thomsen, K.J., Thiel, C., Sohbatl, R. 2012. A robust feldspar luminescence dating method for Middle and Late Pleistocene sediments. Boreas 41(3), 435-451. Murray, A.S., ROBERTS, R.G. 1998. Measurement of the equivalent dose in quartz using a regenerative-dose single-aliquot protocol. Radiation Measurements 29, 503-515. Wintle, A.G., Murray, A.S. 2006. A review of quartz optically stimulated luminescence characteristics and their relevance in single-aliquot regeneration dating protocols. Radiation Measurements 41, 369-391. Yuhikara, E.G., McKeever, S.W.S. 2011. Optically Stimulated Luminescence: Fundamentals and Applications. Wiley, 378p.