



הזמנה להרצאת דוקטורט

יעל לוינסון

המכון למדעי כדה"א, האוניברסיטה העברית
בהנחיית פרופ' סיימון עמנואל

יום רביעי 15 ביוני 2016, 10:00, חדר 109

בליה של סלעים קרבונטיים מסקלת הננו לסקלה הגלובלית

Carbonate weathering: from the nano-scale to the global scale

The weathering of carbonate rocks plays a critical role in the evolution of landscapes, the erosion of buildings and monuments, and the global-scale shifting of carbon from the atmosphere to the ocean. The majority of laboratory experiments exploring the interaction between carbonate minerals and water have focused on single crystals or powders. However, rocks contain grain boundaries and pores, and are often made up of multiple mineral phases, all of which could affect the rates and mechanisms that control weathering. Using atomic force microscopy, I imaged the surfaces of dissolving limestone and found that in addition to standard mode of mineral dissolution that had been observed in previous studies, small micron size grains became physically detached from the rock surface after undergoing partial dissolution along grain boundaries. This effect was found to account for around 40% of the overall rate of mass removal in micritic limestone. Moreover, I demonstrate that grain detachment can occur even in the absence of shearing fluid flow. This result suggests that the removal of grains from rock surfaces may at least partially be due to repulsive forces between the calcite grains. In my lecture, I will discuss the implications that grain detachment has for field scale weathering rates and the global carbon cycle.

הזמנה זה משמשת אישור כניסה לקמפוס אדמונד י. ספרא, גבעת רם החל מהשעה 8:00
מרכז הסמינר: רון שער (02-6584248, 055-8813241)