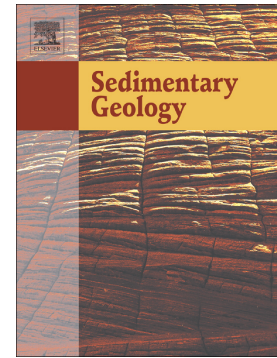


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Study of a modern calcrete forming in Guadalajara, Central Spain:  
An analogue for ancient root calcretes

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9 ABSTRACT

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11 The Pajares calcrete in Central Spain, a modern calcrete, consists of an  
12 accumulation of powder carbonate around the roots of living trees and bushes  
13 which penetrates Miocene deposits by more than 3 m. Calcrete development is  
14 mostly vertical and oblique, but thinner horizontal calcified root mats also occur.  
15 Carbonate accumulation, up to 15 cm thick, is made up of micrite with some  
16 etched clasts, alveolar septal structures, calcified rootlets, coated grains and  
17 micrite grains. In detail many of these features are composed of needle fibre  
18 calcite and micro-rods. Accumulation of carbonate was produced both by roots  
19 through direct calcification of their cells and also by microbial activity within the  
20 rhizosphere. This case study provides a good example of how carbonate is  
21 accumulating around roots at present and may allow better understanding of  
22 ancient calcretes, especially those which formed directly around roots in direct  
23 contact with the hostrock. In addition the calcrete`s setting, and its occurrence  
24 around roots belonging to various types of plants, suggest that carbonate

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