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## **Relation between silicified faults and evolution of the Cabo Frio High**

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## Relation between silicified faults and evolution of the Cabo Frio High

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The Cabo Frio High represents a structural and magmatic feature limiting Santos and Campos Basins. Several examples of faults and magmatic intrusions are pervasive on the continental border from Niterói, to Cabo Frio and Búzios municipalities. These structures present silicified faults that register information about the kinematic of the deformation, helping to decipher the history of the structural evolution in this region. This work intends to investigate how silicified faults accommodate the deformation events of the Cabo Frio High. To achieve this objective the paper presents field data of faults and fractures, along with description of the type of lithology deformed to determine the paleostress and infer the chronology of the events. The results show that the Upper Cretaceous evolution starts with a paleotension stress field with SHmax NE-SW with Transtensional to Pure Strike Slip tensors relation. The second phase is related to a permutation of the  $\sigma_1$  and  $\sigma_2$  and SHmax NE-SW with Radial Extension to Oblique Extension tensors relation. The third phase has SHmax WNW-ESE with Pure Extensional to Strike-Slip Extensional tensors relation and, the fourth phase has SHmax N-S with Radial Extension to Extensional Strike-Slip tensors relation. The silicified faults present at least five deformational events distinguished by the type of lithology deformed and the superposition of striae in the fault plane. The first deformation was formed during the reactivation process of the continental margin by the intrusion of alkaline rocks at a depth of around 3 - 5 km and reactivated during uplifting registered in the iron-coated and clayed fault planes. The deformation correlates well with the events described for the Continental Rift of Southeast Brazil and the Cabo Frio High, indicating its contemporaneity and structural continuity.