



Seismicity along the Azores-Gibraltar region controlled by global plates' kinematics

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The seismicity along the western part of the Eurasia-Nubian plate boundary has been widely studied and is characterized by a very complex pattern. The movement is transtensional in the Azores, dextral along the Gloria transform and convergent between the SW Atlantic margin and the Ibero-Maghrebian zone. In order to understand geographical evolution of the seismicity pattern along this plate frontier, we compare it to the global plate kinematics. More precisely, we consider the difference between the kinematics velocities, supplied by several global kinematics models, across of the Eurasia and Nubian plates. We find a good correlation between this difference of the kinematics velocities and the slip vector provided by the seismicity. Indeed, the directions of these vectors are very similar. A change in the direction of the displacement vector is systematically associated with a similar change of the vector representing the difference of the kinematics velocities. This points out that the seismicity pattern would be controlled by the global plates' kinematics. More quantitatively, the norm of the difference of the kinematics velocities also scales with the slip velocity deduced from the seismicity studies.