The improvement of our understanding of the physics of the Earth's interior is one of the key objectives of the ESA Earth Explorer missions. In the present work a numerical experiment for the Moho estimation under the Tibet-Quinghai plateau and the Himalayan range has been performed. In this first approach we correct the gravity observations for the topography and the known sediments and invert the residual field for the crust-mantle interface. The uniqueness of the solution is guaranteed when using this simplified model. Our inversion algorithm is based on the linearization of the Newton's gravitational law around an approximate mean Moho surface. The resulting equations have been inverted by exploiting Wiener-Kolmogorov theory in the frequency domain and treating the Moho depth as a random signal with a zero mean and its own covariance function. As for the gravity observations, we considered grids of the anomalous gravitational potential and its second radial derivative at satellite altitude, as computed by applying the so called space-wise approach to several months of GOCE data. Errors of these grids has been obtained by means of Monte Carlo simulation. Taking the simplified lateral density variations for granted, the Moho under the considered area has been estimated with an accuracy of few kilometers at a resolution of about 250 km which is compatible with the GOCE mission purposes. The resulting Moho has been also compared with other existing global and local models in order to evaluate the additional information provided by GOCE.