Venus is a terrestrial planet with dimensions similar to the Earth and, although it is generally assumed that it does not host plate-tectonics, there are indications that Venus might have experienced some form of tectonics. The rifts on Venus (chasmatas) have been likened to continental rifts on Earth such as the East African (e.g., Basilevsky & McGlynn, 2007) and Atlantic rift system prior to ocean opening (Graff et al., 2018), even if they are commonly wider than their terrestrial equivalent (e.g., Foster & Nimmo, 1996). However, despite being a prominent feature on its surface, little is known about the mechanisms responsible for creating rifts on Venus beyond the assumption that they are extensional features (Maple & Head, 1995). Here, we used the 2D numerical code FALCON adapting numerical models of rifting on Earth to Venus in order to study how rifting could have been formed and evolve under the high pressure and temperature conditions of the Venusian surface.

Introduction

Model Setup

Earth Model

Heat flux and Elevation

Summary of the results

Conclusion

References