



Arm wrestling between two mountains: Andes and Mid-Atlantic Ridge

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The Andes are probably the best example of “yo-yo” behaviour since 300 Ma ago; sometimes growing (up) and other times shrinking (down). On the opposite boundary (eastern South American Plate - SAm), the spreading rate of the south Mid-Atlantic Rift (MAR) has also behaved like a “yo-yo” since ca. 140 Ma ago. Comparison of Andean and MAR evolutions tells the story of an intimate relationship for the last 140 Ma: when the Andes were high, the MAR spread slower, and when the Andes were low, the MAR spread faster. This parallel evolution of southern Andes and MAR is not a coincidence; they comprise opposite boundaries of the same stress guide (the elastically thick and strong continental SAm), hence the forces generated by one affect the behaviour of the other. Therefore the MAR gave birth to the Andes and supports them from the east, but variations in the Andes control MAR spreading rate.