



## **New insights into the rainbow**

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Firstly, a new realistic model of the rainbow has been developed. It is based on the Airy theory. The main entry parameters are the droplet size distribution, the angle of the sun above horizon and the temperature of the droplets and the wavelength. It is usually assumed that the overall aspect of the rainbow is mostly dependant on the size of the droplets, but our results show that it is usually NOT the case.

Secondly, we have tested the basic assumptions of the Airy's theory. Surprisingly, they are only valid in a small angle close to minimum deviation angle (less than 2 degrees). For instance in the supernumerary area, the Airy's theory has obvious flaws. However does it mean that scientists should avoid using the Airy's theory in the study of the rainbow?