

# Barycentric subdivision: same topology, different face rings

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## **Abstract.**

Barycentric subdivision replaces a simplicial complex by a finer one without changing its topology, but it changes the associated face ring. Through a simple example, we will explore how the face rings before and after subdivision can be compared, and what happens when symmetries are also taken into account. In favorable characteristics, this comparison can be made compatible with the symmetries, while characteristic 2 reveals a genuine obstruction.