**Introduction:** The top-edge of a noise barrier can be designed to improve the sound attenuation behind the barrier.

**Objective:** Improvement in sound attenuation over wide frequency spectrum.

**Computational Methods:** Acoustics solver in 2D frequency domain of Comsol 5.3 has been used in this study.

**Conclusions:** Barrier can be tuned for a certain frequency bandwidth by selecting appropriate well-size at the top-edge. A combination of these periodic wells (like QRD) can obtain good attenuation over multiple frequencies.

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**References:**