**Plane waveguides with corners in the small angle limit**

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The plane waveguides with corners considered here are infinite V-shaped strips with constant thickness. They are parametrized by their sole opening angle. We study the eigenpairs of the Dirichlet Laplacian in such domains when their angle tends to 0. We provide multi-scale asymptotics for eigenpairs associated with the lowest eigenvalues. For this, we investigate the eigenpairs of a one-dimensional model which can be viewed as their Born-Oppenheimer approximation. We also investigate the Dirichlet Laplacian on triangles with sharp angles. The eigenvalue asymptotics involve powers of the cube root of the angle, while the eigenvector asymptotics include simultaneously two scales in the triangular part, and one scale in the straight part of the guides.