$$dp_1 = d_z \cos \gamma_1, \quad \cos \gamma_1 = \frac{1 - \mathcal{A}^2}{1 + \mathcal{A}^2}$$
$$dp_2 = d_z \cos \gamma_2, \quad \cos \gamma_2 = \frac{1 - \mathcal{B}^2}{1 + \mathcal{B}^2}.$$