

$$f = \cot \phi + \tan(\phi - \alpha)$$

$$= \frac{\cos \phi}{\sin \phi} + \frac{\sin(\phi - \alpha)}{\cos(\phi - \alpha)}$$

$$= \frac{\cos \phi (\cos \phi \cdot \cos \alpha + \sin \phi \cdot \sin \alpha) + \sin \phi (\sin \phi \cdot \cos \alpha - \cos \phi \cdot \sin \alpha)}{\sin \phi \cdot \cos(\phi - \alpha)}$$

$$= \frac{\cos^2 \phi \cdot \cos \alpha + \cancel{\sin \phi \cdot \cos \phi \cdot \sin \alpha} + \sin^2 \phi \cdot \cos \alpha - \cancel{\sin \phi \cdot \cos \phi \cdot \sin \alpha}}{\sin \phi \cdot \cos(\phi - \alpha)}$$

$$= \frac{\cos \alpha (\cos^2 \phi + \sin^2 \phi)}{\sin \phi \cdot \cos(\phi - \alpha)}$$

$$= \frac{\cos \alpha}{\sin \phi \cdot \cos(\phi - \alpha)}$$

(2.5)