

from an oblique shock chart, illustrated in the figure below. The chart also reveals a number of important features:

1. There is a maximum turning angle θ_{\max} for any given upstream Mach number M_1 . If the wall angle exceeds this, or $\theta > \theta_{\max}$, no oblique shock is possible. Instead, a *detached shock* forms ahead of the concave corner. Such a detached shock is in fact the same as a bow shock discussed earlier.
2. If $\theta < \theta_{\max}$, two distinct oblique shocks with two different β angles are physically possible. The smaller β case is called a *weak shock* and is the one most likely to occur in a typical supersonic flow. The larger β case is called a *strong shock* and is unlikely to form over a straight-wall wedge. The strong shock has a subsonic flow behind it.
3. The strong-shock case in the limit $\theta \rightarrow 0$ and $\beta \rightarrow 90^\circ$, in the upper-left corner of the oblique shock chart, corresponds to the normal-shock case.

