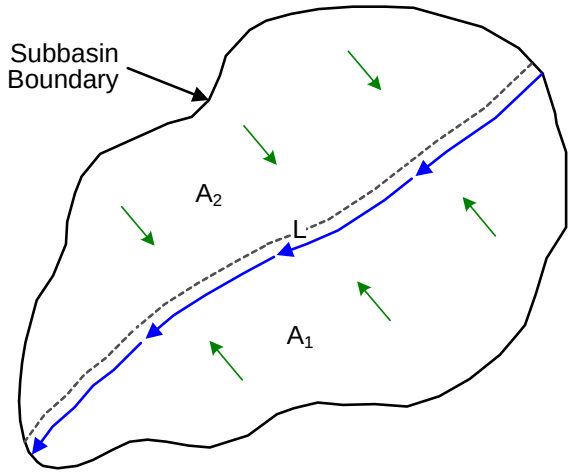
Subbasin Equivalent Width Computation

The following method can be used to compute the subbasin equivalent width



Subbasin Equivalent Width

$$W = (2 - S_k) \times L$$

Where:

S_k = Skew factor ($0 = S_k = 1$) = $(A_2 - A_1)/(A_1 + A_2)$
A_1 = Area on one side of the subbasin channel
A_2 = Area on other side of the subbasin channel
L = Length of subbasin channel

Figure 9.4 *Method for computing an equivalent subbasin width for determining the time of concentration (Tc) for some Tc methods*

Using the method as described in Figure 9.4 to compute an equivalent width, the software then develops a rectangular subbasin in which overland flow contributions from both pervious and impervious areas are idealized as running down-slope off the subbasin, as shown in Figure 9.3, to the subbasin outlet.

The maximum overland flow length is the length of the flow path from the inlet to the furthest drainage point (sometimes called a *concentration point* or *spill point*) of the subbasin. Maximum lengths from several different possible flow paths should be averaged. These paths should reflect slow flow, such as over pervious surfaces, more than rapid flow over pavement, for example.

Adjustments should be made to this width parameter to produce a good fit to measured runoff hydrographs. This value is generally a key parameter in calibrating peak flow and total runoff volume.

Average Slope

Specify the average slope (in percent) for the subbasin, for sheet flow and shallow concentrated flow. This value is used to compute the time of concentration for some Tc methods. The default average slope defined in the software is 0.5 % which is equivalent to 0.05 ft/ft.