



**Example 189 :** As shown in Figure 1 ,  $\triangle ABC$  , take point  $D$  on  $BC$  ,  $\triangle BCD$  the circumscribed circle intersects  $AC$  at  $E$  , take point  $F$  on the extension line of  $ED$  , the circumscribed circle of  $\triangle BEF$  intersects  $AB$  at  $G$  , and at  $AB$  Take point  $H$  above , make  $AG = AH$  , extend  $GH$  to intersect  $BC$  at  $I$  , and prove that  $BG = BI$  .

$$\frac{G-I}{G-B} = \frac{A-C}{B-C} \frac{F-E}{A-C} \frac{I-G}{B-A} ,$$

$$\frac{I-G}{A-B} \frac{A-G}{G-I} = \frac{E-F}{B-C} \frac{G-B}{A-C} \frac{B-A}{G-A} ,$$

$D$  and  $H$  do not appear in the identity , and these two points are virtually eliminated. If  $H$  is on the extension line of  $BA$  , is the conclusion still valid?