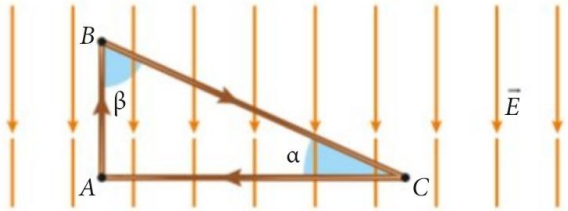
**68** ◆◆◆ Considera il campo elettrico $\vec{E}$ uniforme rappresentato nella figura.



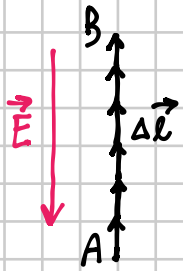

▶ Calcola esplicitamente la circuitazione del campo elettrico lungo il percorso orientato chiuso descritto dal triangolo rettangolo $ABC$. [0]

$$\Gamma_{\mathcal{L}}(\vec{E}) = \sum_A^B \vec{E}\cdot\Delta\vec{\ell} + \sum_B^C \vec{E}\cdot\Delta\vec{\ell} + \sum_C^A \vec{E}\cdot\Delta\vec{\ell} = (*)$$

$$\sum_A^B \vec{E}\cdot\Delta\vec{\ell} = \sum_A^B E\,\Delta\ell\cdot\underbrace{\cos 180^\circ}_{-1} = -E\sum_A^B \Delta\ell = -E\,\overline{AB}$$

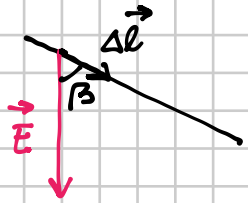
$E$ si raccoglie

$\sum_A^B \Delta\ell$ = lunghezza del segmento $AB$

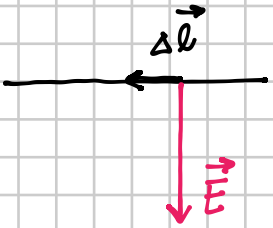



$$\sum_B^C \vec{E}\cdot\Delta\vec{\ell} = \sum_B^C E\,\Delta\ell\cos\beta = E\cos\beta\sum_B^C \Delta\ell = E\cos\beta\cdot\overline{BC}$$

$\sum_B^C \Delta\ell = \overline{BC}$




$$\sum_C^A \vec{E}\cdot\Delta\vec{\ell} = \sum_C^A E\,\Delta\ell\,\underbrace{\cos 90^\circ}_{0} = 0$$




$$(*) = -E\,\overline{AB} + E\,\overbrace{\overline{BC}}^{\overline{AB}}\cos\beta + 0 =$$

$$= -E\,\overline{AB} + E\,\overline{AB} = 0$$