

Table 3: Cross product over complex vectors and its related properties

Description	Formalized signification
Cross product	$\begin{aligned} & - !X Y. X \text{ ccross } Y = \text{vector } [X\$2 * Y\$3 - X\$3 * Y\$2; \\ & \quad X\$3 * Y\$1 - X\$1 * Y\$3; X\$1 * Y\$2 - X\$2 * Y\$1] \end{aligned}$
Cross Zero is Zero	$\begin{aligned} & - !X. \text{cvector_zero} \text{ ccross } X = \text{cvector_zero} /\ \ \\ & \quad X \text{ ccross } \text{cvector_zero} = \text{cvector_zero} \end{aligned}$
Irreflexivity	$ - !X. X \text{ ccross } X = \text{cvector_zero}$
Asymmetry	$ - !X Y. -- (X \text{ ccross } Y) = Y \text{ ccross } X$
Distributivity over addition	$\begin{aligned} & - !X Y Z. (X + Y) \text{ ccross } Z = X \text{ ccross } Z + Y \text{ ccross } Z /\ \ \\ & \quad X \text{ ccross } (Y + Z) = X \text{ ccross } Y + X \text{ ccross } Z \end{aligned}$
Distributivity over scalar multiplication	$\begin{aligned} & - !c X Y. (c \% X) \text{ ccross } Y = c \% (X \text{ ccross } Y) /\ \ \\ & \quad X \text{ ccross } (c \% Y) = c \% (X \text{ ccross } Y) \end{aligned}$