Non-redundant array

Observed phase ϕ, true phase ϕ_0, phase error φ

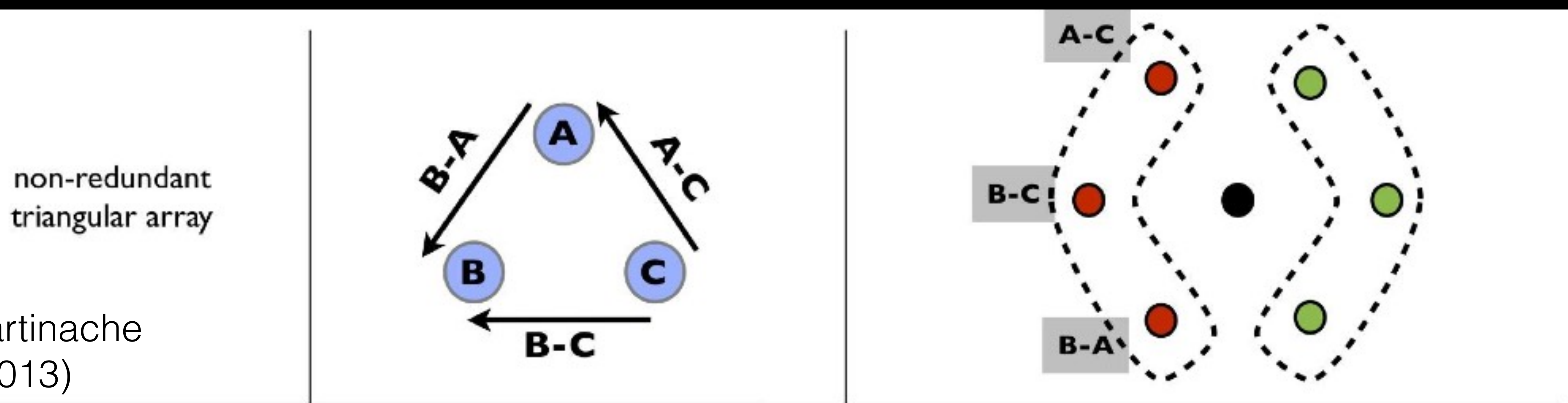
$\phi^{BC} = \phi_0^{BC} + (\varphi^B - \varphi^C)$ $\phi^{AC} = \phi_0^{AC} + (\varphi^A - \varphi^C)$ $\phi^{BA} = \phi_0^{BA} + (\varphi^B - \varphi^A)$

Matrix A encodes the baselines.

$$\mathbf{\Phi} = \mathbf{\Phi}_0 + \mathbf{A} \bullet \boldsymbol{\varphi}$$

A =

0	1	-1
1	0	-1
-1	1	0



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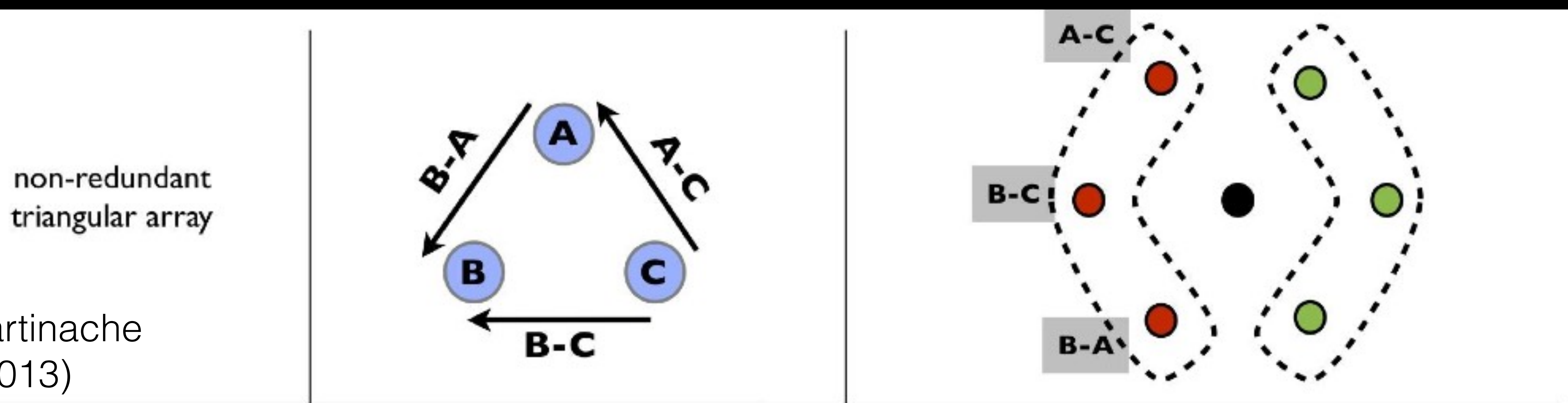
Closure-phase

Want an observable which is independent of phase errors (φ).

$$\Phi = \Phi_0 + \mathbf{A} \bullet \varphi \qquad \mathbf{A} = \begin{bmatrix} 0 & 1 & -1 \\ 1 & 0 & -1 \\ -1 & 1 & 0 \end{bmatrix}$$

Multiply by a transfer matrix **K** such that $\mathbf{K} \bullet \mathbf{A} = 0$

Then $\mathbf{K} \bullet \Phi = \mathbf{K} \bullet \Phi_0$



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