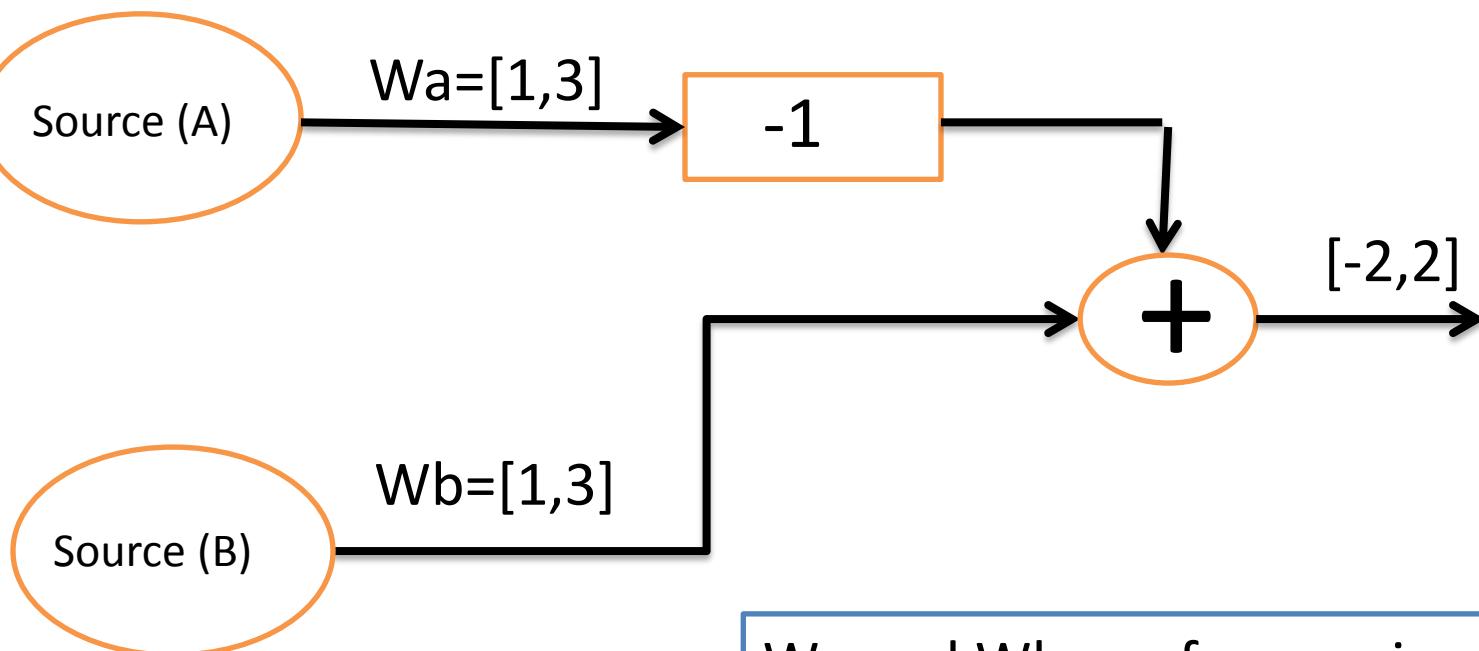
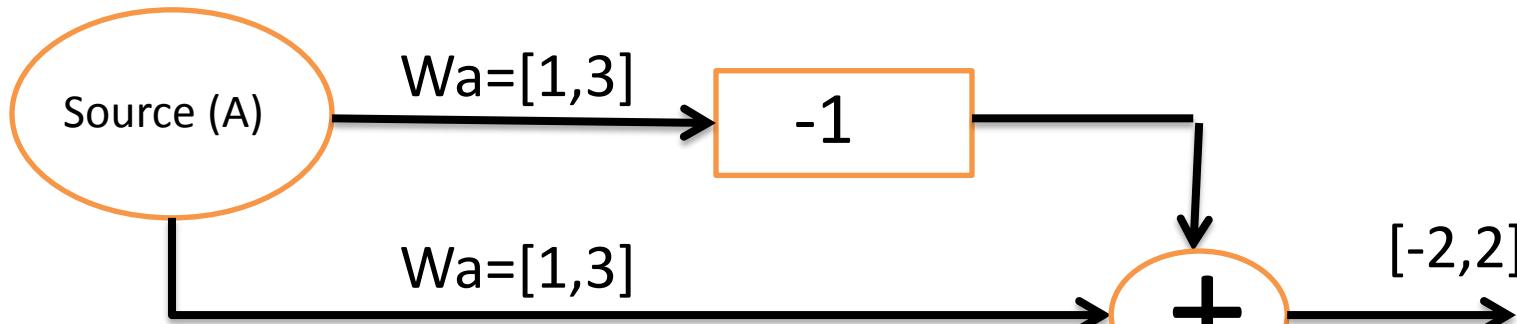


IEEE Standard 1788-2015  
vs.  
Multidimensional RDM Interval Arithmetic

Mehran Mazandarani  
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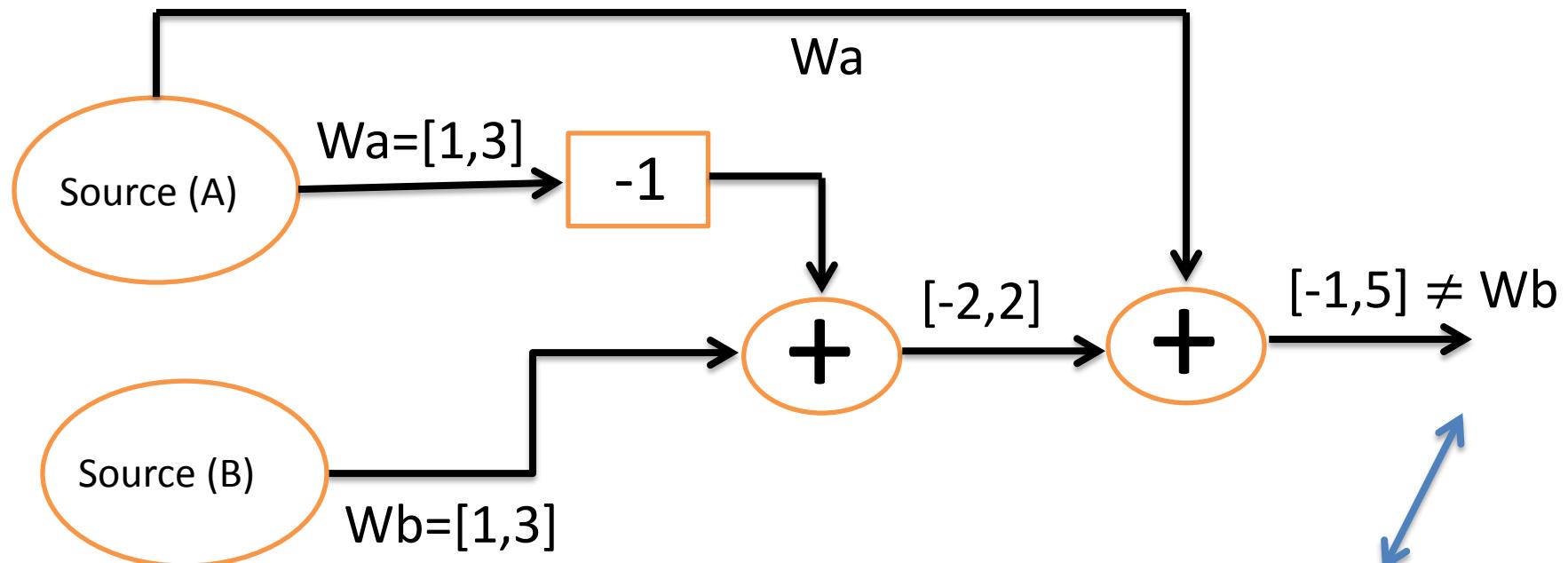
# IEEE Standard 1788-2015



Wa and Wb are forces, signals or etc.

Dependency issue

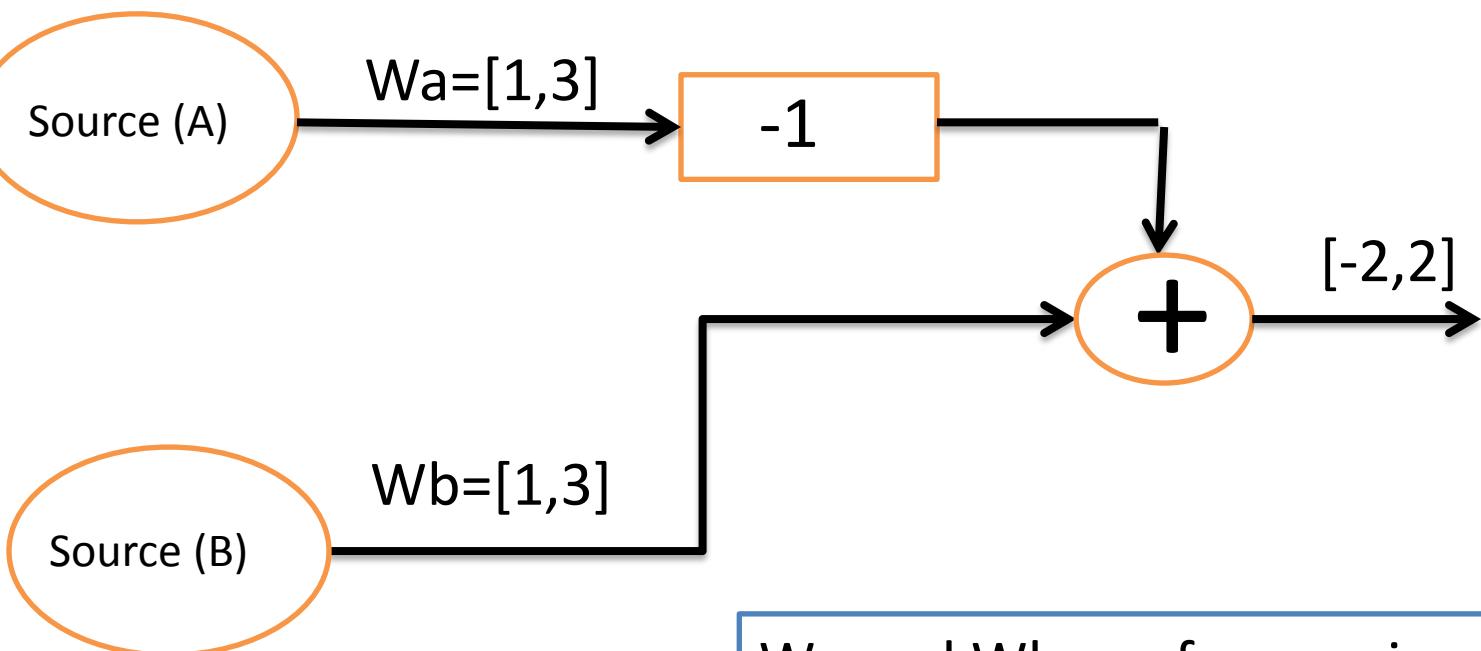
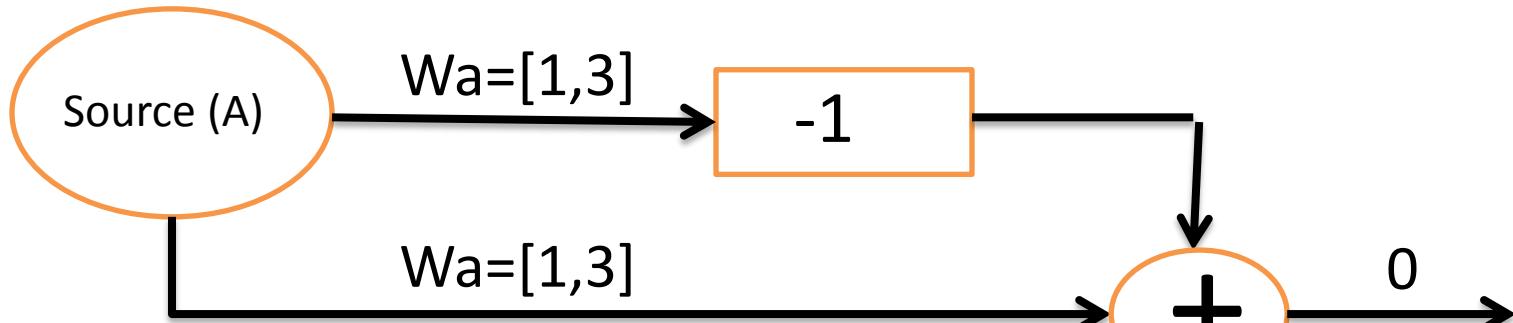
## IEEE Standard 1788-2015



Restoration issue

Wa and Wb are forces, signals or etc.

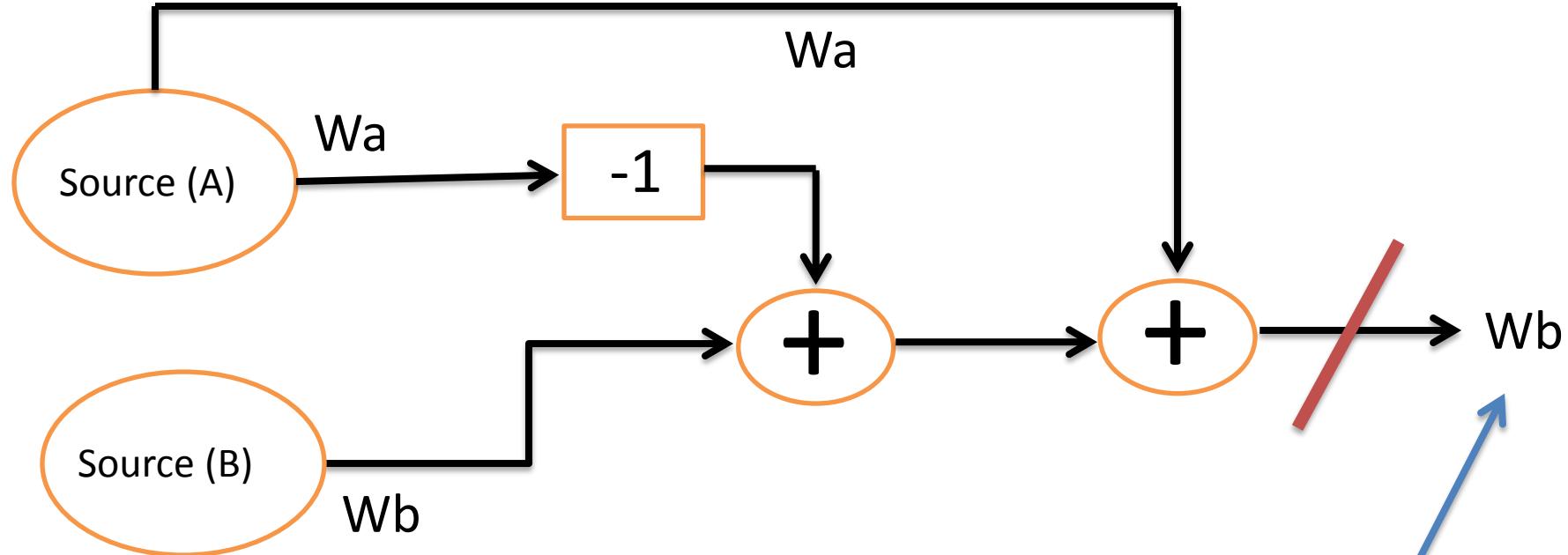
# Multidimensional RDM Interval Arithmetic



Wa and Wb are forces, signals or etc.

There is no dependency issue

# IEEE Standard 1788-2015

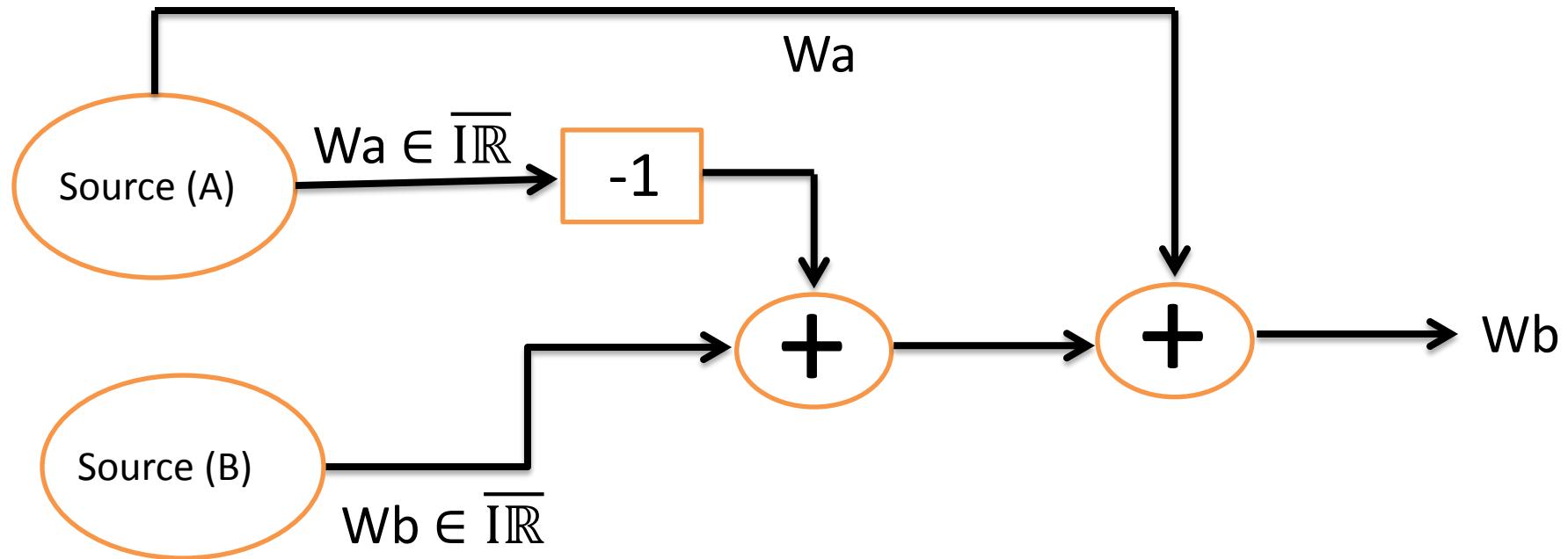


$$W_a \in \overline{\mathbb{IR}}$$

$$W_b \in \overline{\mathbb{IR}}$$

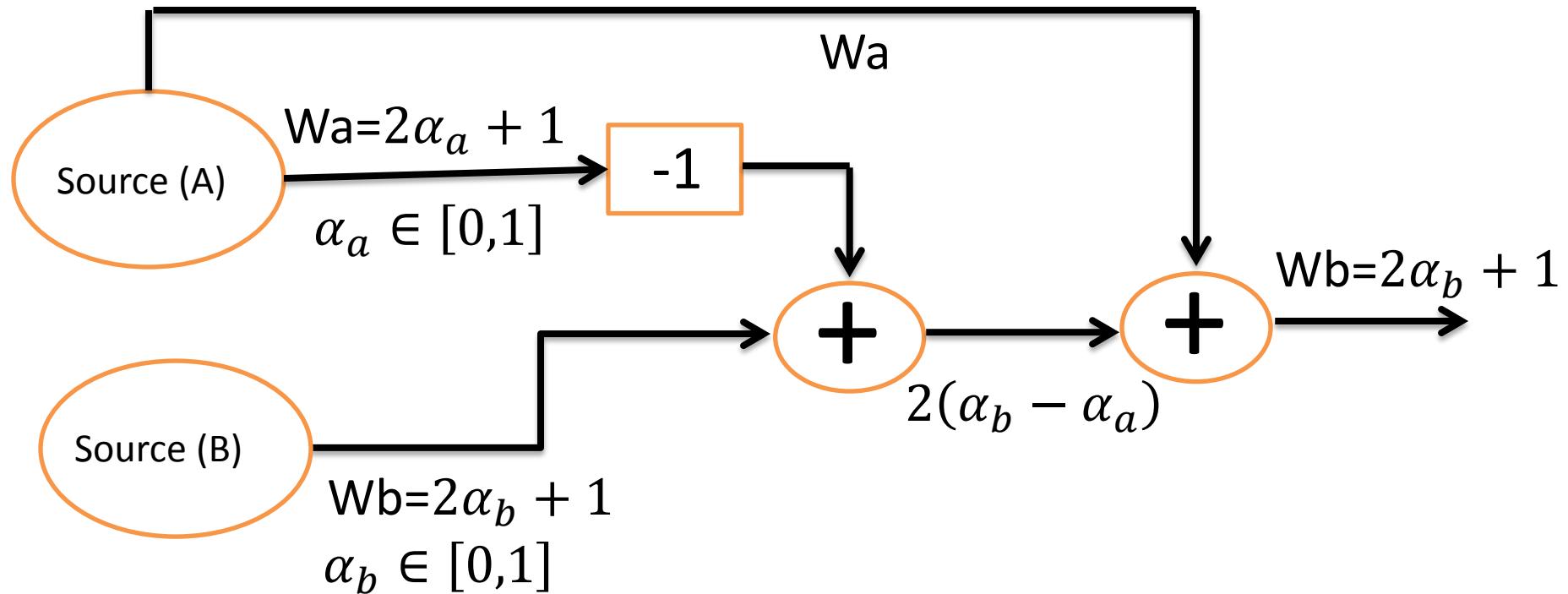
Restoration issue

# Multidimensional RDM Interval Arithmetic



There is no Restoration issue

# Multidimensional RDM Interval Arithmetic



There is no Restoration issue

$$W_a \in \overline{\mathbb{IR}}$$

$$W_b \in \overline{\mathbb{IR}}$$

W is a force, signal or etc.

## Some references for Multidimensional RDM Interval Arithmetic

- Piegat, A., Tomaszewska, K., Decision-making under uncertainty using info-gap Theory and a new multidimensional RDM interval arithmetic. *Electrotech. Rev.* 89(8), 71–76 (2013)
- Piegat, A., Landowski, M., Two interpretations of multidimensional RDM interval arithmetic—multiplication and division. *Int. J. Fuzzy Syst.* 15(4), 488–496 (2013)
- Piegat, A., Landowski, M., Correctness-checking of uncertain equation solutions on example of the interval-modal method. In: K.T. Atanassov et al. (eds.) *Modern Approaches in Fuzzy Sets, Intuitionistic: Fuzzy Sets, Generalized Nets and Related Topics, Volume I: Foundations*, IBS PAN—SRI PAS, Warsaw, pp. 159–1700 (2014)
- Andrzej Piegat, Marek Landowski , Horizontal Membership Function and Examples of its Applications, *Int. J. Fuzzy Syst.* (2015) 17(1):22–30
- Karina Tomaszewska, Andrzej Piegat, Application of the horizontal membership function to the uncertain displacement calculation of a composite massless rod under a tensile load, *Soft Computing in Computer and Information Science*, Volume 342, 2015, pp 63-72
- Andrzej Piegat and Marcin Pluciński, Fuzzy Number Addition with the Application of Horizontal Membership Functions, *The Scientific World Journal*, <http://dx.doi.org/10.1155/2015/367214>