

$$\chi_{II} = \frac{1}{J_{SE} \Delta} \left[J_{XX} \text{ (Diagram 1)} \times \text{ (Diagram 2)} - \text{ (Diagram 3)} \right]$$

The diagrams illustrate the components of the determinant expansion for a 3x3 matrix of nodes (X, PC, SOM):

- Diagram 1 (Left):** A gray circle labeled 'X' with a self-loop. The loop is labeled J_{XX} .
- Diagram 2 (Middle):** A red circle labeled 'PC' and a green circle labeled 'SOM' connected by two horizontal lines. The top line is labeled J_{SE} and the bottom line is labeled J_{ES} . A small green dot is on the PC node and a small red dot is on the SOM node.
- Diagram 3 (Right):** A red circle labeled 'PC', a green circle labeled 'SOM', and a gray circle labeled 'X' connected in a triangle. The top line (PC-SOM) is labeled J_{SE} , the bottom line (PC-X) is labeled J_{EX} , and the right line (X-SOM) is labeled J_{XS} . A small gray dot is on the PC node, a small green dot is on the X node, and a small red dot is on the SOM node.