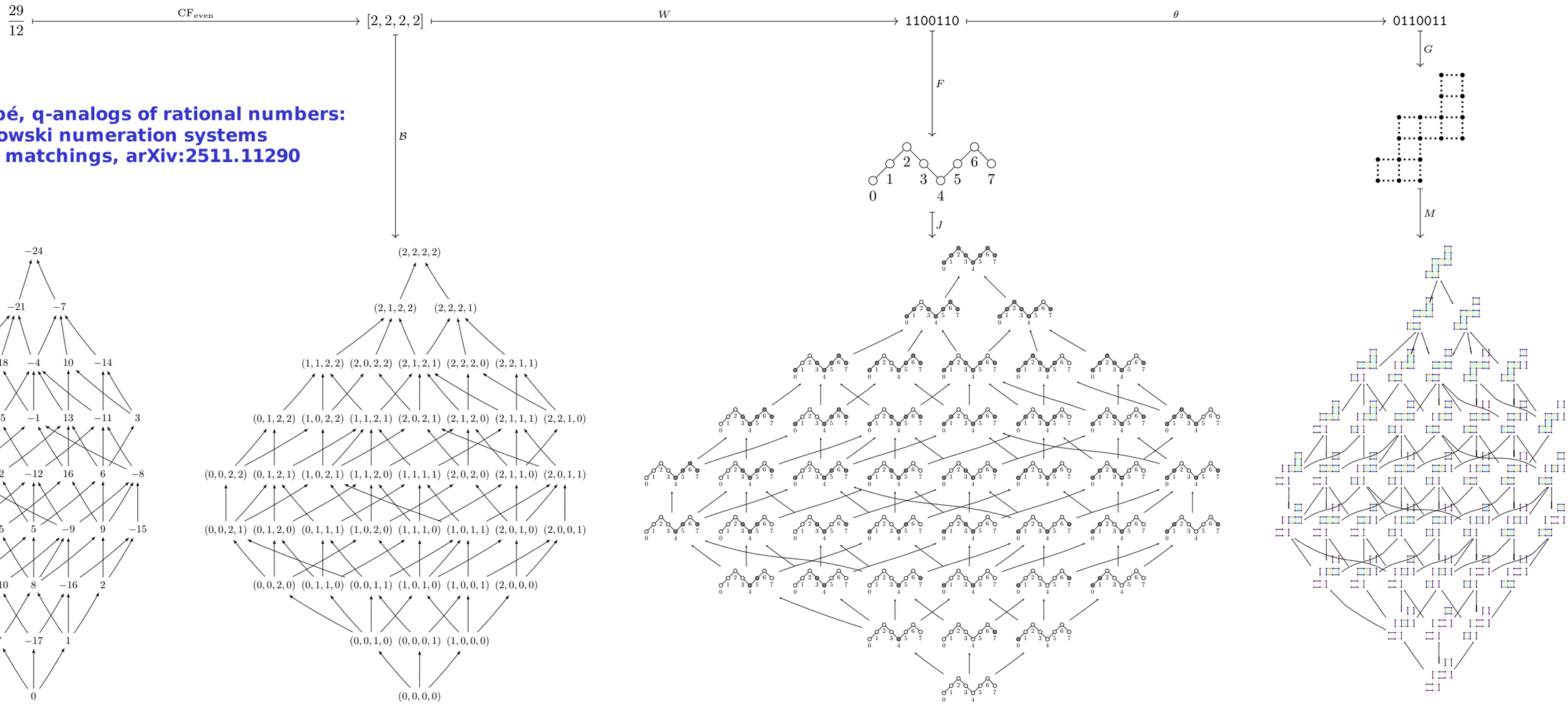
Aval, Labbé, q-analogs of rational numbers: from Ostrowski numeration systems to perfect matchings, arXiv:2511.11290



$\mathcal{Z}([2,2,2,2]) = \mathbb{Z} \cap [-24, 17)$ ← val — $\mathcal{B}([2,2,2,2])$ ← Ψ — $\mathcal{J}(\frac{29}{12})$ ← Φ — $\mathcal{M}(\frac{29}{12})$

$(r_0, -r_1, r_2, -r_3) = (1, -3, 7, -17)$
$r_4 = 41$

$$\left[\frac{29}{12}\right]_q = q^{-1}\frac{q^8 + 2q^7 + 5q^6 + 6q^5 + 6q^4 + 5q^3 + 3q^2 + q}{q^5 + 2q^4 + 3q^3 + 3q^2 + 2q + 1}$$