

Bosons

Bose partons

$$S = b_{\alpha}^{\dagger} \frac{\sigma_{\alpha\beta}}{2} b_{\beta}$$

Superfluid

Antiferromagnetic order

Paired superfluid

Square lattice:

CP^1 model

or $SO(5)_1$ WZW model

Triangular lattice:

\mathbb{Z}_2 spin liquid

SPT

Chiral spin liquid