\( G_n \)-model with \( n = 200, m = 193 \)
ER-model ($G_{n,p}$) vs. WS-model

$C_{n,p}$-model with $n = 16$, $p = \frac{1}{2}$

Small-world networks: random rewiring

$\mathcal{C}$ and $\mathcal{L}$ for the WS-model

$\rho$ = 0

Increasing randomness

$\rho$ = 1
\[ \frac{f'p}{f'p} = \frac{(D\circ f'(p))H = (f'(p))}{(1-u)} \]

Morphing

\[ C \text{ and } f \text{ for WS-model revised} \]

\[ C \text{ and } f \text{ for the morphing model} \]
one edge by preferential attachment

- BA-model: initial set of vertices, addition of new vertices one by

- low degree, but not the small-world property

- Power-law degree distribution produces more vertices of high and

- ER-model, power-law, WS even network

- to be of type $p(k) \approx k^{-\gamma}$

- in natural small-world networks, the degree distribution appears

Growth and preferential attachment

(Barabási–Albert, BA-model)
\( L \) for ER and BA

Number of cycles (>3) for ER, WS, and BA