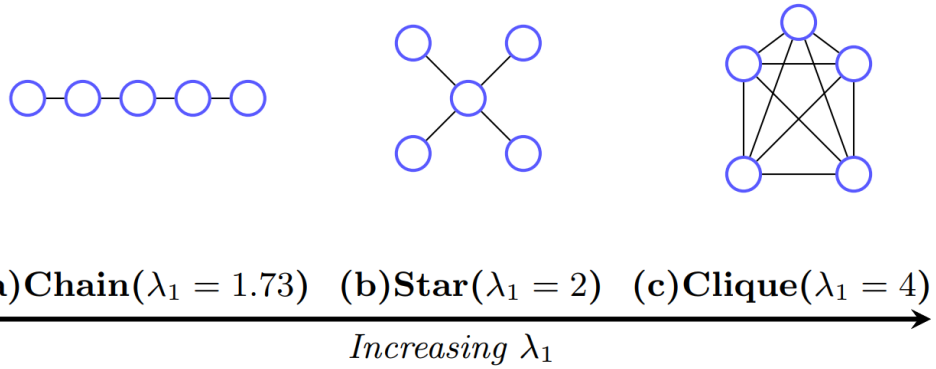
Cascades & Spectra

- Effective strength of a virus $s = C_{VPM}\lambda_1$ with tipping point at $s = 1$

Models	C_{VPM}
$SIS, SIR, SIRS, SEIR$	$\frac{\beta}{\delta}$
$SIV, SEIV$	$\frac{\beta\gamma}{\delta(\gamma+\theta)}$
$SI_1I_2V_1V_2$	$\frac{\beta_1 v_2 + \beta_2 \epsilon}{v_2(\epsilon + v_1)}$



- Research Questions: How is the virus strength influenced by graph topology? What are the typical topological structures? How well does the model respond to manipulation of data?

Sources: B. Aditya Prakash, D. Chakrabarti, N. Valler, M. Faloutsos, C. Faloutsos (2012), Threshold Conditions for Arbitrary Cascade Models on Arbitrary Networks. Knowledge and Information Systems manuscript No. KAIS-12-3483R1