$R^* = 2$, time series: Poisson

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.72	0.87	0.87			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.67	0.61	N/A	N/A	N/A
Social fluidity, ϕ	0.72	0.72	0.63	−0.69	−0.51	
Network size, N		0.37	0.50	−0.31	−0.29	−0.29
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.58	0.67	0.64			−0.32
Mean degree, $\bar{k}$	0.68	0.57	0.51			
Mean strength, $\bar{s}$				0.40		
Mean edge weight, $\bar{w}$		−0.38	−0.50	0.53	0.33	
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.30	−0.45	−0.53	0.36		
Modularity, Q	−0.64	−0.63	−0.44	0.42	0.34	
Mean clustering, $\bar{C}$	0.28			0.30		0.29
Mean prediction error (%)	11.2	9.0	11.4			

$R^* = 2$, time series: Circadian

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.73	0.86	0.87			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.71	0.59	N/A	N/A	N/A
Social fluidity, ϕ	0.72	0.71	0.61	−0.68	−0.55	
Network size, N		0.36	0.53	−0.41		−0.31
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.56	0.69	0.62			−0.32
Mean degree, $\bar{k}$	0.65	0.61	0.49			
Mean strength, $\bar{s}$				0.40		
Mean edge weight, $\bar{w}$		−0.34	−0.48	0.55	0.32	
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.30	−0.45	−0.51	0.38		
Modularity, Q	−0.65	−0.65	−0.44	0.39	0.38	
Mean clustering, $\bar{C}$	0.29		−0.26	0.40		
Mean prediction error (%)	12.5	9.4	11.5			

$R^* = 2$, time series: Bursty

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.73	0.88	0.87			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.72	0.59	N/A	N/A	N/A
Social fluidity, ϕ	0.71	0.76	0.61	−0.73	−0.56	
Network size, N		0.34	0.53	−0.35		−0.30
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.58	0.66	0.62			−0.29
Mean degree, $\bar{k}$	0.67	0.58	0.48			
Mean strength, $\bar{s}$				0.35		
Mean edge weight, $\bar{w}$		−0.38	−0.47	0.48	0.34	
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.30	−0.47	−0.50	0.33		
Modularity, Q	−0.62	−0.68	−0.45	0.48	0.37	
Mean clustering, $\bar{C}$	0.27		−0.28	0.30		0.27
Mean prediction error (%)	11.9	9.0	11.4			

$R^* = 3$, time series: Poisson

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.77	0.91	0.87			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.73	0.59	N/A	N/A	N/A
Social fluidity, ϕ	0.74	0.73	0.55	−0.68	−0.40	0.34
Network size, N		0.47	0.67	−0.28		−0.36
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.60	0.64	0.53			
Mean degree, $\bar{k}$	0.67	0.53	0.37			
Mean strength, $\bar{s}$				0.43		
Mean edge weight, $\bar{w}$		−0.45	−0.52	0.55		
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.34	−0.48	−0.49	0.35		
Modularity, Q	−0.63	−0.60	−0.34	0.41	0.41	−0.33
Mean clustering, $\bar{C}$			−0.43	0.29		0.32
Mean prediction error (%)	11.9	8.8	18.0			

$R^* = 3$, time series: Circadian

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.79	0.92	0.87			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.73	0.60	N/A	N/A	N/A
Social fluidity, ϕ	0.76	0.72	0.55	−0.65	−0.37	0.36
Network size, N		0.48	0.66	−0.29		−0.35
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.61	0.62	0.53			
Mean degree, $\bar{k}$	0.68	0.51	0.37			
Mean strength, $\bar{s}$				0.42		
Mean edge weight, $\bar{w}$		−0.46	−0.53	0.50		
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.38	−0.48	−0.48			
Modularity, Q	−0.65	−0.59	−0.34	0.36	0.40	−0.34
Mean clustering, $\bar{C}$			−0.45	0.38		0.35
Mean prediction error (%)	11.7	8.6	17.6			

$R^* = 3$, time series: Bursty

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.78	0.90	0.86			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.71	0.59	N/A	N/A	N/A
Social fluidity, ϕ	0.75	0.71	0.54	−0.68	−0.35	0.37
Network size, N		0.47	0.69	−0.37		−0.39
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.62	0.63	0.52			
Mean degree, $\bar{k}$	0.69	0.51	0.37			
Mean strength, $\bar{s}$				0.43		
Mean edge weight, $\bar{w}$		−0.45	−0.50	0.52		
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.36	−0.48	−0.45	0.32		
Modularity, Q	−0.64	−0.57	−0.32	0.38	0.37	−0.35
Mean clustering, $\bar{C}$			−0.45	0.38		0.31
Mean prediction error (%)	11.6	9.3	17.8			

$R^* = 4$, time series: Poisson

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.84	0.92	0.84			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.71	0.56	N/A	N/A	N/A
Social fluidity, ϕ	0.76	0.66	0.45	−0.78		0.50
Network size, N	0.30	0.60	0.77		−0.29	−0.44
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.64	0.56	0.42			
Mean degree, $\bar{k}$	0.68	0.43				
Mean strength, $\bar{s}$			−0.29	0.40		
Mean edge weight, $\bar{w}$	−0.28	−0.49	−0.53	0.54		
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.41	−0.46	−0.45	0.36		
Modularity, Q	−0.63	−0.49		0.53		−0.54
Mean clustering, $\bar{C}$		−0.32	−0.57			0.52
Mean prediction error (%)	11.3	10.6	28.9			

$R^* = 4$, time series: Circadian

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.83	0.91	0.83			
Mean individual rep. number, $\bar{r}(s_i)$	0.97	0.71	0.55	N/A	N/A	N/A
Social fluidity, ϕ	0.77	0.65	0.45	−0.79		0.47
Network size, N		0.59	0.77			−0.44
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.64	0.57	0.42			
Mean degree, $\bar{k}$	0.68	0.43				
Mean strength, $\bar{s}$			−0.28	0.34		
Mean edge weight, $\bar{w}$	−0.29	−0.49	−0.53	0.49		
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.41	−0.46	−0.44	0.32		
Modularity, Q	−0.63	−0.48		0.53		−0.53
Mean clustering, $\bar{C}$		−0.32	−0.56			0.48
Mean prediction error (%)	10.3	10.6	29.0			

$R^* = 4$, time series: Bursty

	Correlation with R_0^{sim}			Corr. with prediction error		
	$g=0$	$g=1$	$g=2$	$g=0$	$g=1$	$g=2$
Estimated rep. number, R_0^{Est}	0.83	0.93	0.83			
Mean individual rep. number, $\bar{r}(s_i)$	0.96	0.73	0.55	N/A	N/A	N/A
Social fluidity, ϕ	0.76	0.68	0.45	−0.79		0.49
Network size, N	0.28	0.59	0.77		−0.27	−0.44
Excess degree, $\bar{k} + \sigma_k^2/\bar{k}$	0.63	0.57	0.42			
Mean degree, $\bar{k}$	0.68	0.44				
Mean strength, $\bar{s}$			−0.27	0.31		
Mean edge weight, $\bar{w}$	−0.29	−0.49	−0.52	0.46		
Edge weight heterogeneity, $\sigma_w^2/\bar{w}$	−0.42	−0.46	−0.42	0.28		
Modularity, Q	−0.61	−0.50		0.59		−0.50
Mean clustering, $\bar{C}$		−0.31	−0.56			0.48
Mean prediction error (%)	11.1	10.2	28.4			