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Supplementary Materials to Hidden Markov Model in Multiple Testing on Dependent Count Data

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1. Results of Case 3 in Section 4.2.2

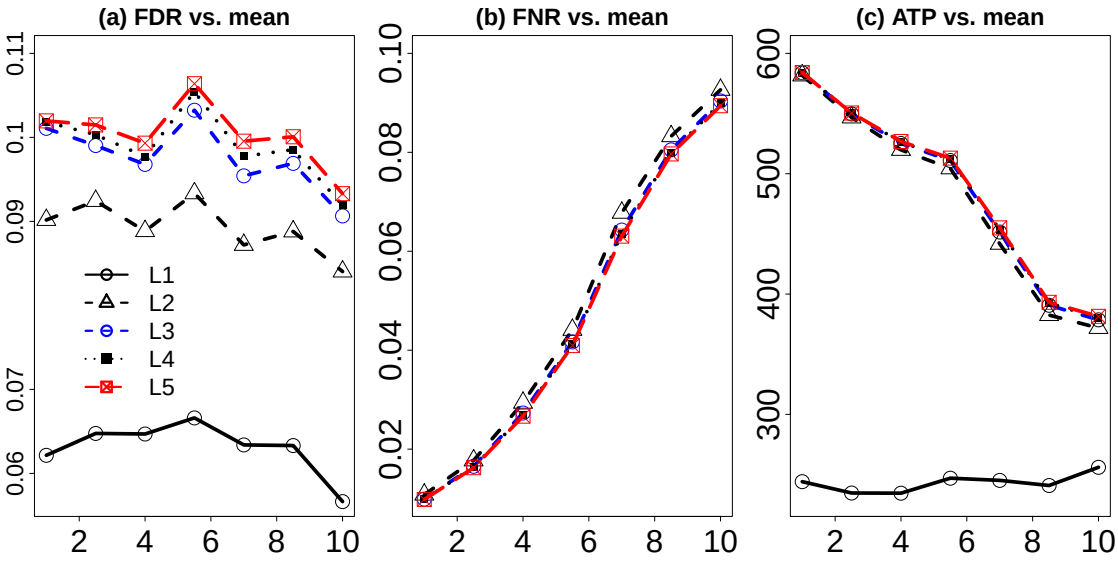

Figure 1. Comparison of FDR, FNR and ATP under different components using FB test procedure. a_{11} fixed at 0.8 and non-null distribution is $f_1 = 0.4 * \text{Poisson}(\mu_{11}) + 0.3 * \text{Poisson}(20) + 0.3 * \text{Poisson}(25)$ with μ_{11} varying from 1 to 10: FDR, FNR and ATP vs μ_{11}.

Table 1. Model selection: $L = 3$ case

	Fitted Model				
Method	L=1	L=2	L=3	L=4	L=5
$\log p_{BS}(\mathbf{X}\|M_L)$	–	328 (98%)	6 (2%)	–	–
$\log p_{IS}(\mathbf{X}\|M_L)$	–	323 (97%)	11 (3%)	–	–
$\log p_{RI}(\mathbf{X}\|M_L)$	–	328 (98%)	6 (2%)	–	–
$\log p_{HM}(\mathbf{X}\|M_L)$	–	40 (12%)	141 (42%)	79 (24%)	74 (22%)
$\log p_{HM_2}(\mathbf{X}\|M_L)$	–	68 (20%)	156 (47%)	80 (24%)	30 (9%)
BIC_L	90 (26%)	256 (73%)	4 (1%)	–	–

[a] Non-null distribution is $f_1 = 0.4*\text{Poisson}(\mu_{11})+0.3*\text{Poisson}(20)+0.3*\text{Poisson}(25)$ with μ_{11} varying from 1 to 10. The true number of components is $L = 3$.