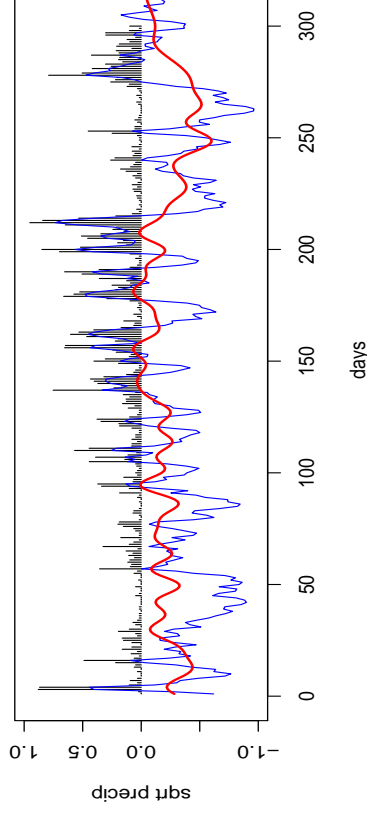


# Approach to precipitation modeling: with lots of 0's in your data

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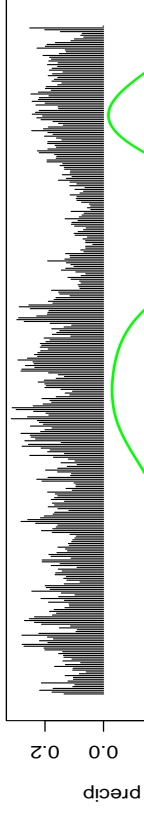


Fitted values of  $\theta_t$  (thin lines) and seasonal  $\mu_d$  (thick lines), first 300 days; against average transformed precipitation  $\text{sqrt}(R)$  (vertical lines).

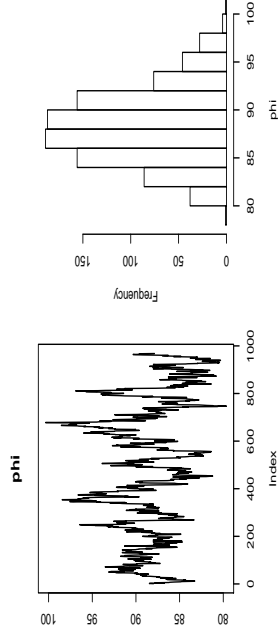


During wet periods,  $\theta_t$  tracks  $\text{sqrt}(R)$ . During dry periods (precipitation probability < 50%), however,  $\theta_t$  becomes negative.

Fitted values of seasonal potential  $\mu_d$  against average transformed precipitation  $\text{sqrt}(R)$  (vertical lines).



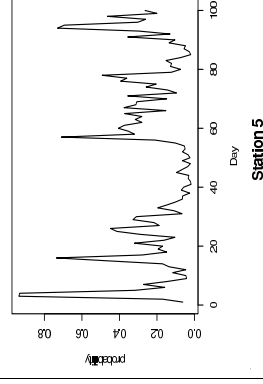
Markov Chain output:  $\phi$  (range parameter, km)



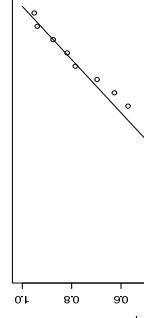
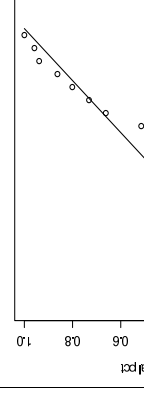
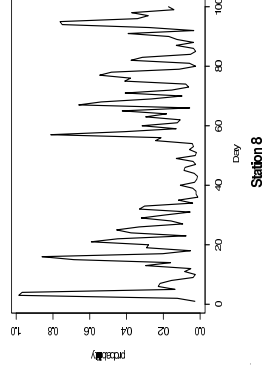
## Cross-validation

Predicted precipitation probabilities (first 100 days):

Station 5



Station 8



and is  
 = 0.  
 ation