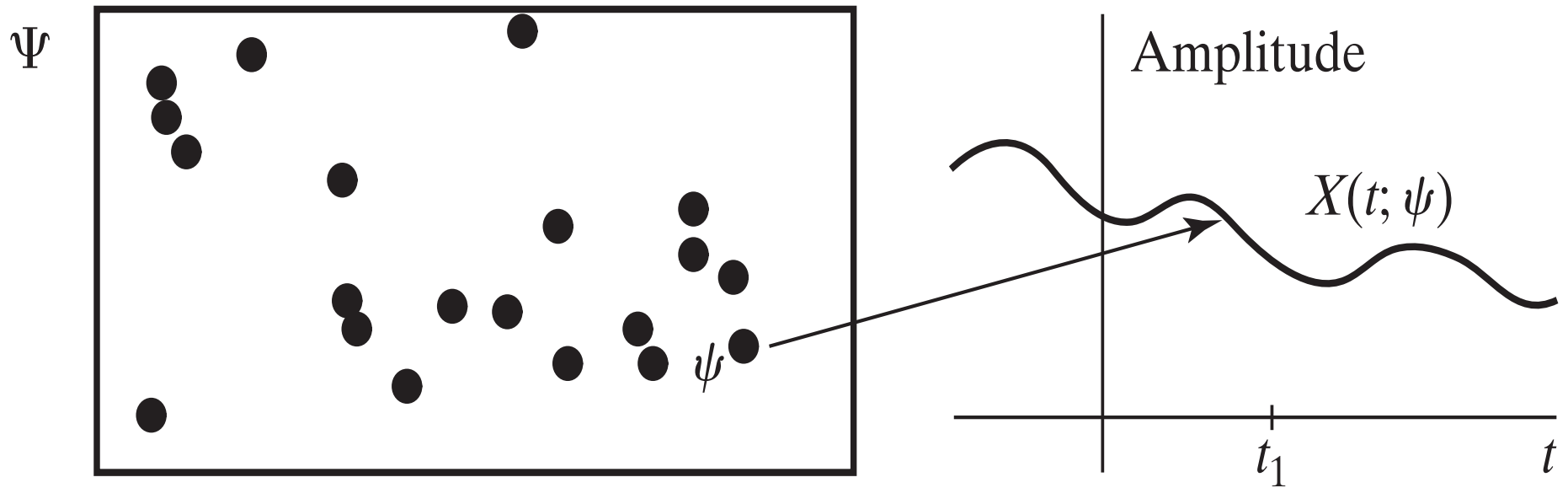


# Wide-sense stationary processes; LTI filtering of WSS processes

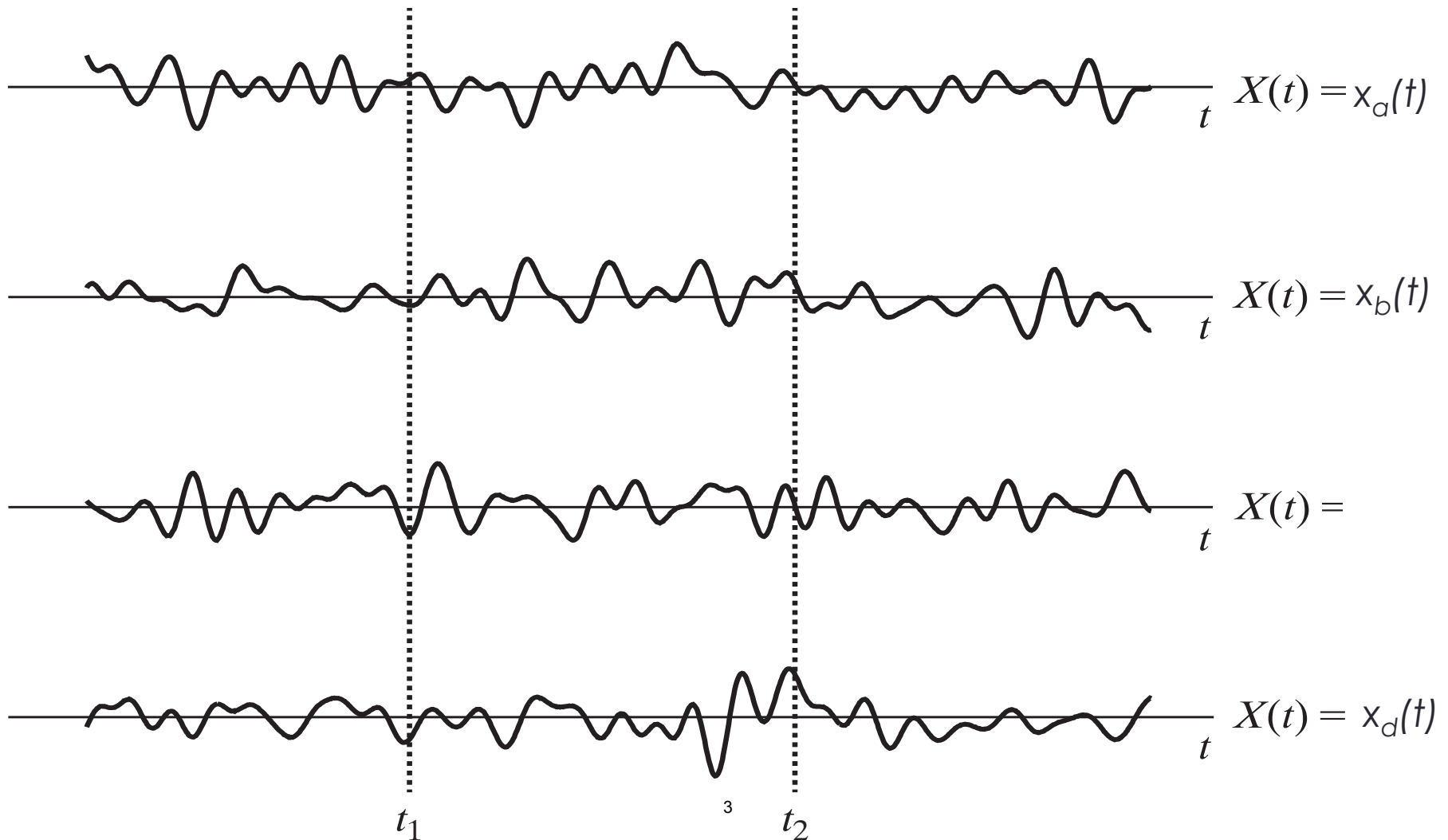
**6.011, Spring 2018**

**Lec 16**

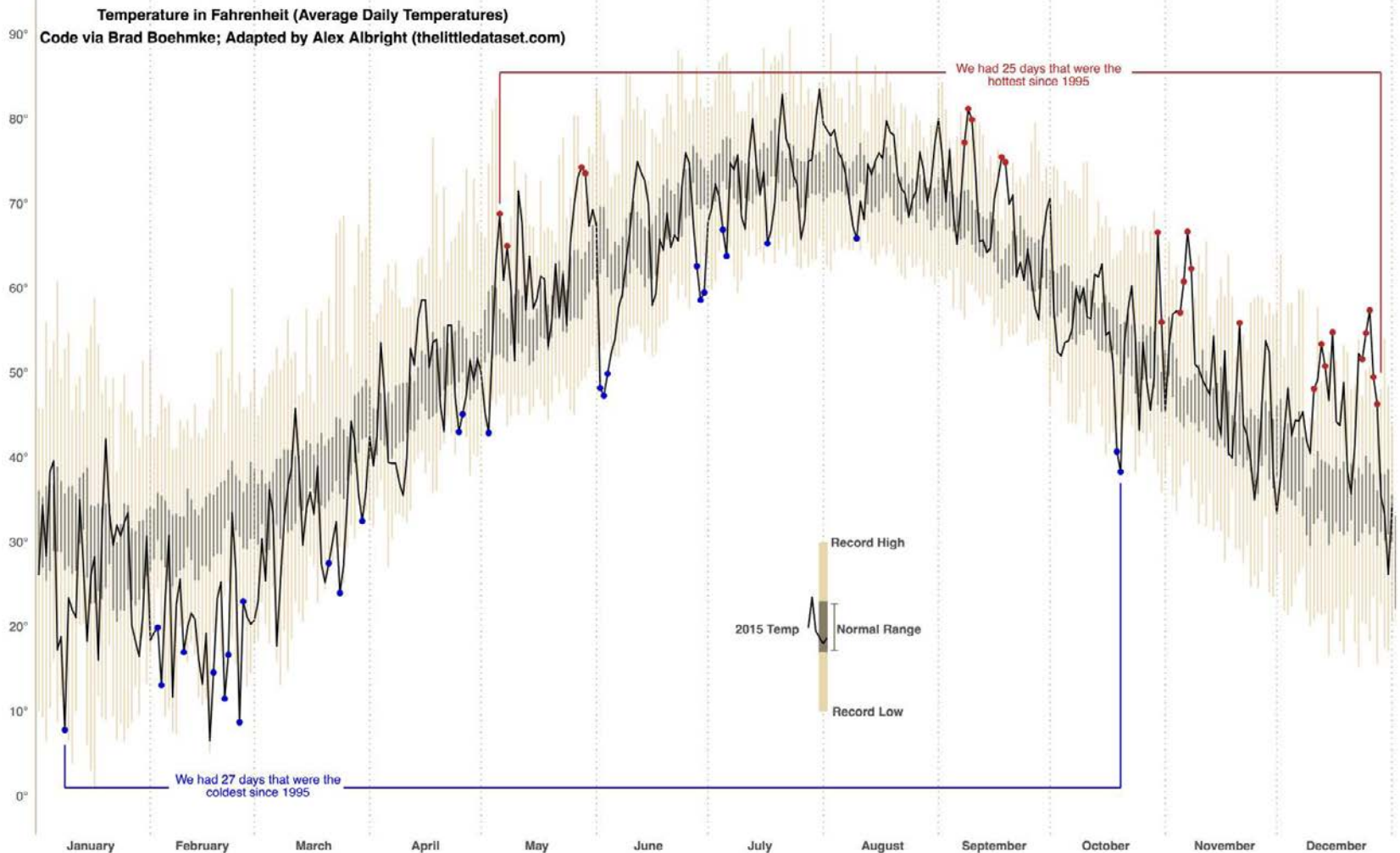
# Random process



# Signal ensemble for outcomes a,b,c,d; & determination of $R_{XX}(t_1, t_2)$



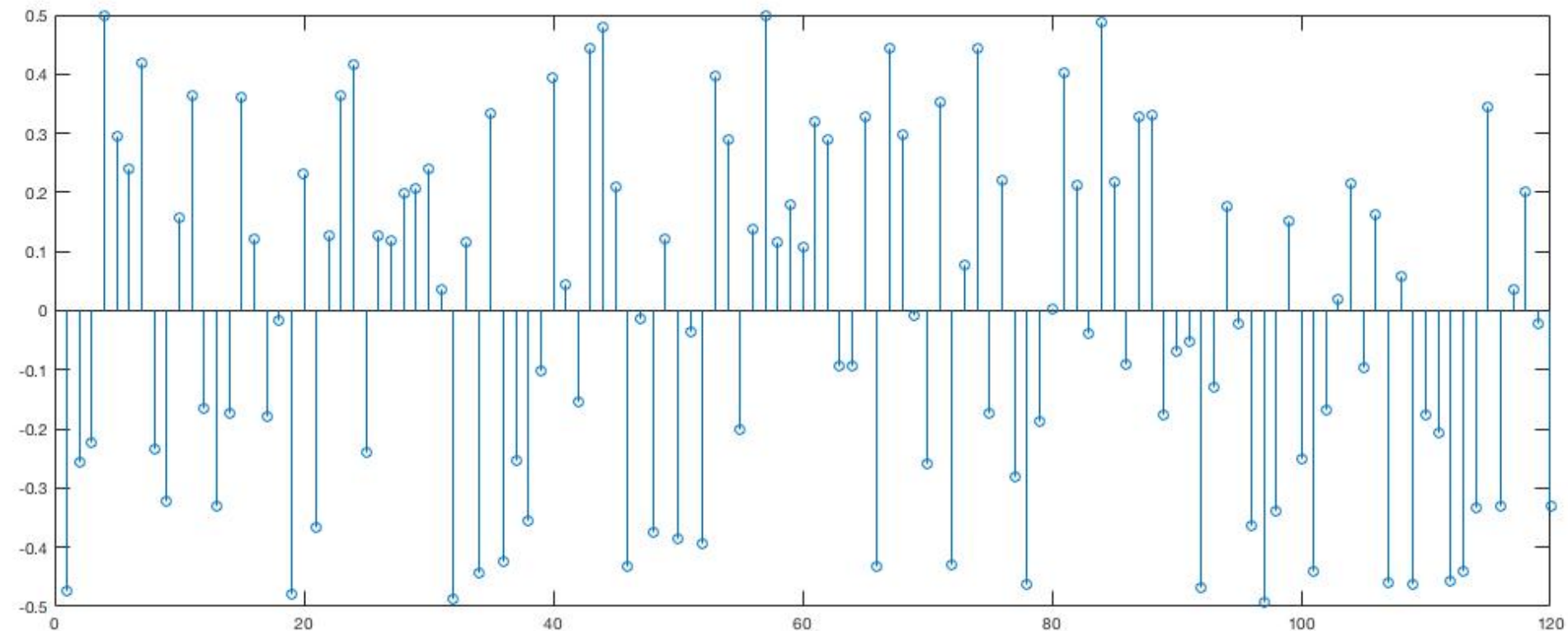
# Boston Weather, 1995–2015



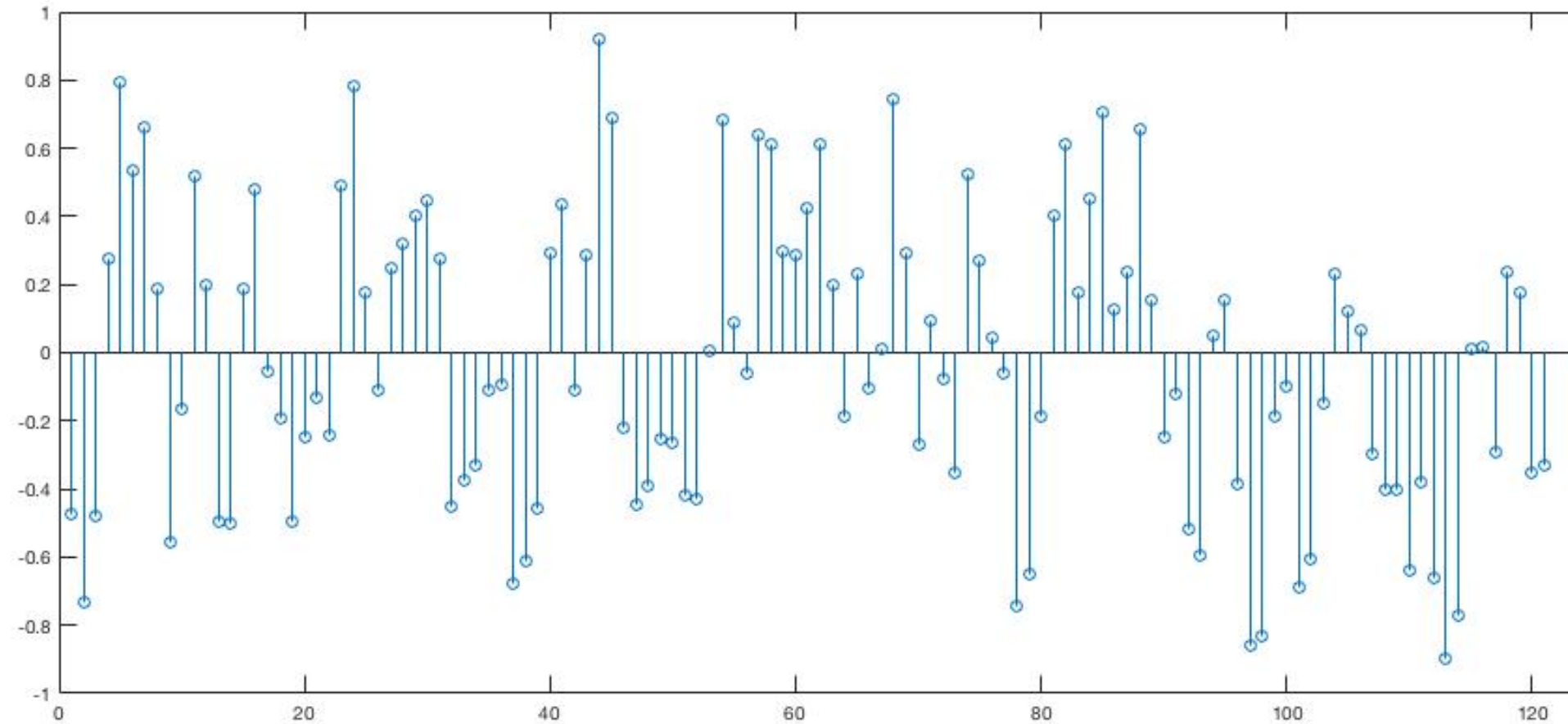
Courtesy of [Alex Albright](#). Used with permission.

Weather plot was generated with code adapted from [Bradley Boehmke](#).

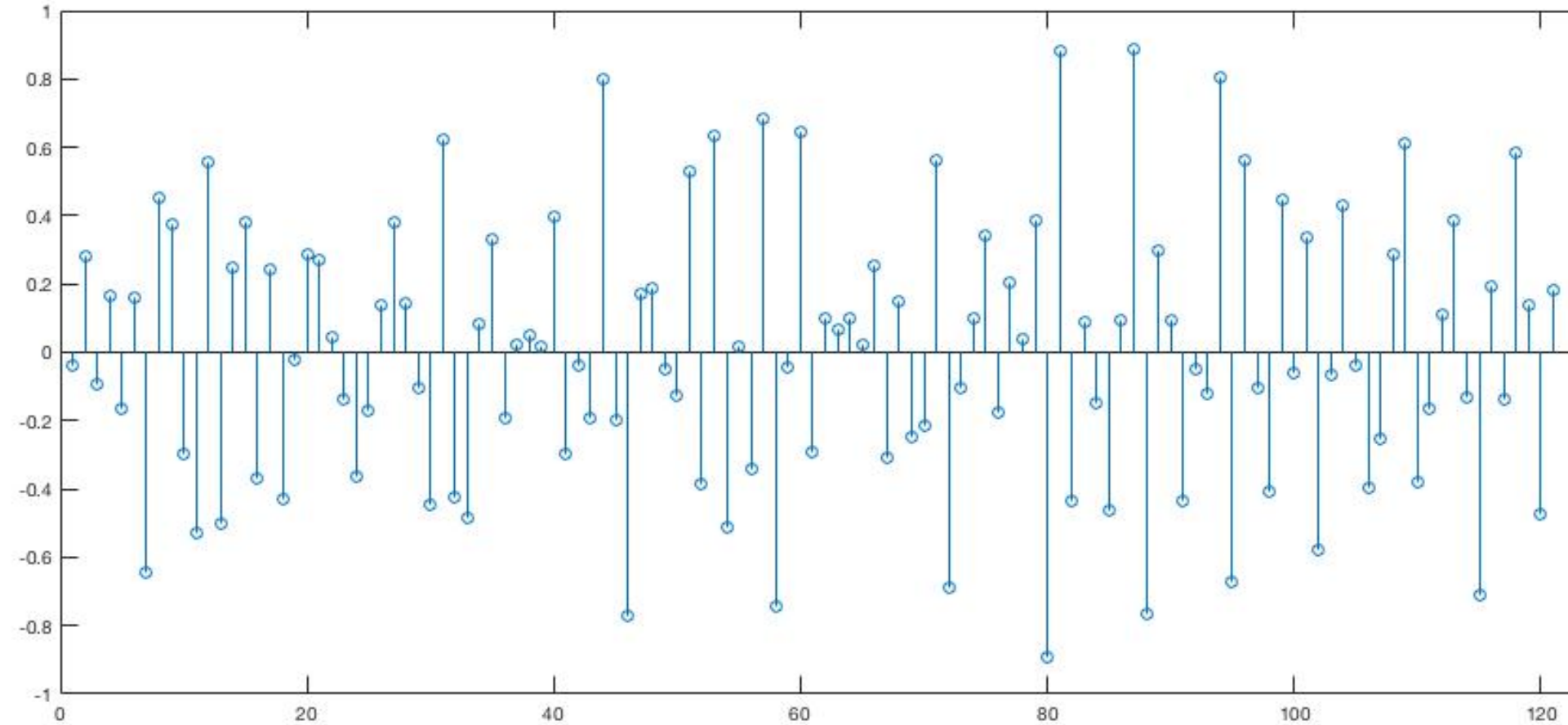
iid signal  $x[n]$ , uniform in  $[-0.5, +0.5]$



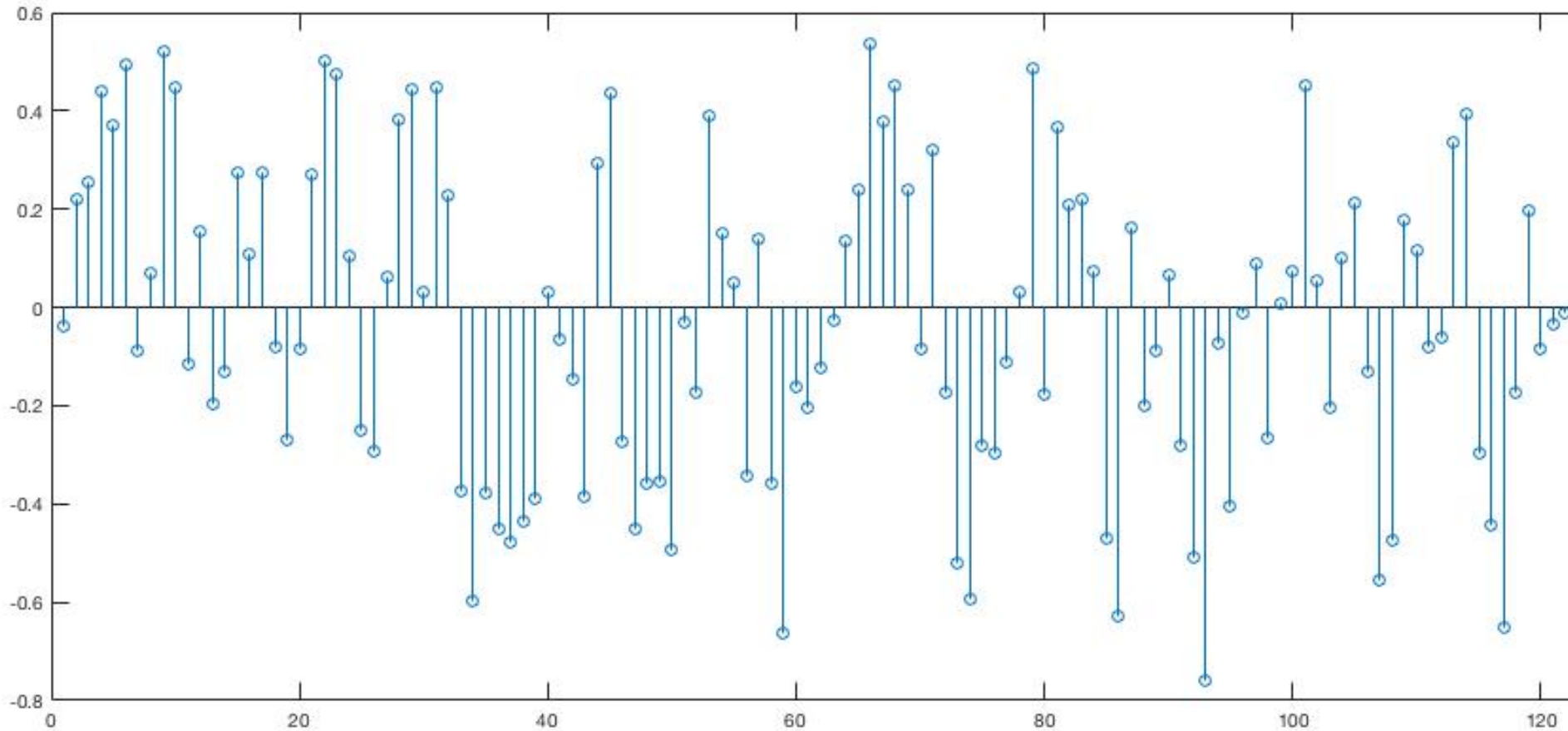
$$y = h * x, \text{ with } h[n] = \delta[n] + \delta[n-1]$$



$$y = h * x, \text{ with } h[n] = \delta[n] - \delta[n-1]$$

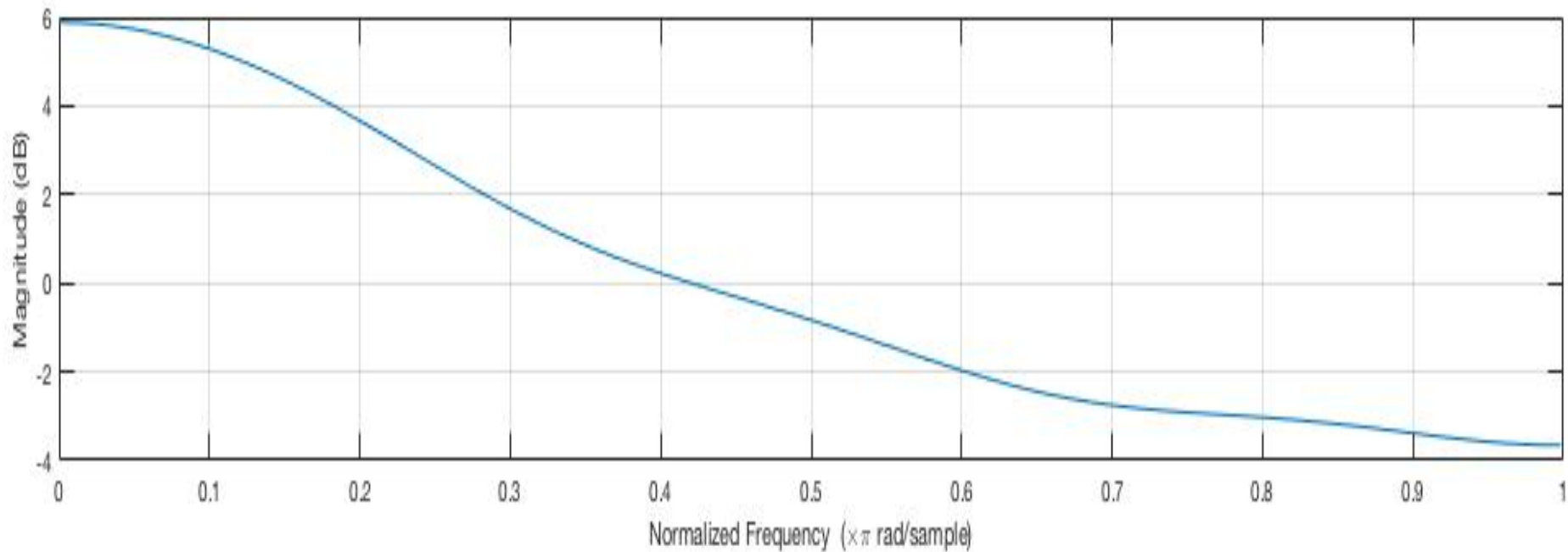


$$y = h * x, \text{ with } h[n] = (0.5)^n u[n]$$





$|H|$  when  $h[n] = (0.5)^n u[n]$



MIT OpenCourseWare  
<https://ocw.mit.edu>

6.011 Signals, Systems and Inference  
Spring 2018

For information about citing these materials or our Terms of Use, visit: <https://ocw.mit.edu/terms>.