

Paper: Regular Sparse Array Direction of Arrival in One Dimension.

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Figure 3

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Script environment

This script does not depend on the random number generator state.

```
clear
close all
```

Figure 3

```
signal.freq = 1.5*1e6;
c = physconst('LightSpeed');
signal.dist = 0.48*(2*pi*c/signal.freq);
signal.angles = deg2rad(105);
signal.rate = 7;
signal.shift = 5;

psi = -1i*signal.freq*cos(signal.angles)/c;
PSI = exp(psi*signal.dist);

plot_base_terms(PSI.*exp(2*pi*1i/signal.shift*(0:signal.shift-1)),...
                PSI.*exp(2*pi*1i/signal.rate*(0:signal.rate-1)));
title(['Fig. 3. Intersection of the sets (15) and 17 ',...
      'for \sigma=7, \rho=5, \omega=1.5GHz,'],...
      ['r=0.48\lambda and the angles \phi_i of the incoming ',...
      'signal being 105 degrees. No'],...
      ['noise was added.'])
```

Fig. 3. Intersection of the sets (15) and 17 for $\sigma=7$, $\rho=5$, $\omega=1.5\text{GHz}$, $r=0.48\lambda$ and the angles ϕ_i of the incoming signal being 105 degrees. No noise was added.

