



φ_k  UNIFORM ON UNIT CIRCLE $\rightarrow E\{e^{j\varphi_k}\} = 0$

⑥⑤

INDEPENDENT OVER FREQUENCIES, $\varphi_{-k} = -\varphi_k$

$V_k = \overline{V_k}$  CIRCULAR GAUSSIAN, \hat{V}_k RANDOM
OR DETERMINISTIC \hat{V}_k

RANDOM MULTISINE $\rightarrow \hat{V}_k$ ~~DETERMINISTIC~~ RANDOM
(PERIODIC NOISE)

RANDOM PHASE MULTISINE $\rightarrow \hat{V}_k$ DETERMINISTIC
(RMS)

~~WAVE~~ NORMALIZED RMS: $\frac{1}{2} \sum_k |\hat{V}_k|^2 = 1$

PROPERTIES:

- ① SPECTRUM DETERMINISTIC (RMS)
 \hookrightarrow MINIMIZATION OF BTRF (W1 METHOD) STABLE
- ② NO LEAKAGE (BTRF)
- ③ EASY TO SEPARATE: INPUT EFFECTS, NL DISTORTIONS,
 OUTPUT NOISE EFFECT
 (SEE LATER: ROBUST METHOD)
- ④ EASY INTRODUCTION OF RANDOMNESS
- ⑤ EASY CONSTRUCTION OF DIFFERENT SIGNAL CHARACTERISTICS
- ⑥ EASY REGULATION IN SIGNAL GENERATOR
- ⑦ ASYMPTOTICALLY ($M \rightarrow \infty$) GAUSSIAN
- ⑧ GOOD SUBSTITUTE FOR TRADITIONAL GAUSSIAN SIGNALS
- ⑨ GAUSSIAN SIGNALS ARE ~~ML~~ ML "FRIENDLY"