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Unit 11 - Week 6: Wigner-Ville Distributions (Contd..)

Course outline

Registration for MATLAB Exam

How to access the portal

MATLAB Online Access

MATLAB Tutorials created by MathWorks

Week 1: Introduction, Basic definitions and Concepts

Week 2: Fourier transforms (a review)

Week 3: Duration and Bandwidth

Week 4: Short-time Fourier transform

Week 5: Wigner-Ville Distributions

Week 6: Wigner-Ville Distributions (Contd..)

- Lecture 6.6 A: Cohen's class and smoothed WVD (Part 1)
- Lecture 6.6 B: Cohen's class and smoothed WVD (Part 2)
- Lecture 6.7: Cohen's class and Ambiguity functions
- Lecture 6.8: Affine class and closing remarks
- Solutions to Week 6 Assignment
- Quiz : Week 6 Assignment

Week 7: Continuous Wavelet Transforms

Week 8: Continuous Wavelet Transforms (Contd..)

Week 9: Discrete Wavelet Transforms

Week 10: Discrete Wavelet Transforms (Contd..)

Week 11: Discrete Wavelet Transforms (Contd..)

Week 12: DWT (Contd..) and Closing Summary

Week 6 Assignment

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2016-09-05, 23:59 IST.

1) *1 point*

1. Smoothed pseudo-Wigner-Ville distribution is obtained from Cohen's class of distrib by choosing a kernal which is:

   (a) Only a function of time.
   (b) Only a function of frequency.
   (c) Coupled in time and frequency.
   (d) Separable in time and frequency.

- a
- b
- c
- d

No, the answer is incorrect.
Score: 0

Accepted Answers:
d

2) *1 point*

2. Which of the following is/are TRUE regarding pseudo- and smoothed pseudo-WVD

   (a) In pseudo-WVD, the smoothing is only along time.
   (b) In smoothed pseudo-WVD, the smoothing is only along frequency.
   (c) In pseudo- and smoothed pseudo-WVD, the smoothing is performed along both time frequency.
   (d) None of the above.

- a
- b
- c
- d

No, the answer is incorrect.
Score: 0

Accepted Answers:
d

3) *1 point*

3. Which of the following choice of kernel $(\theta(\tau, \xi)$, as given in the lecture notes) in th Cohen's class of distribution results in spectrogram?

   (a) Constant value.
   (b) Fourier transform of window function.
   (c) Wigner-Ville distribution of window function.
   (d) None of the above.

- a
- b
- c

d

No, the answer is incorrect.
Score: 0

Accepted Answers:
c

4) *1 point*

4. Which of the following smoothed WVD's satisfies the scaling invariance proper

(a) Page distribution.
(b) Margenau-Hill distribution.
(c) Choi-Williams distribution.
(d) Zhao-Atlas-Marks distribution.

a
b
c
d

No, the answer is incorrect.
Score: 0

Accepted Answers:
b
c

5) *1 point*

a
b
c
d

No, the answer is incorrect.
Score: 0

Accepted Answers:
a
b
d

6) *1 point*

6. Cohen's class of distribution is constructed using the time-frequency kernel as $f(\nu, s) = \cos(\frac{\nu s}{2})$, then which of the following properties is/are satisfied by the resu distribution?

(a) Marginality.
(b) Total energy.
(c) Real-valued.
(d) Scaling invariance.

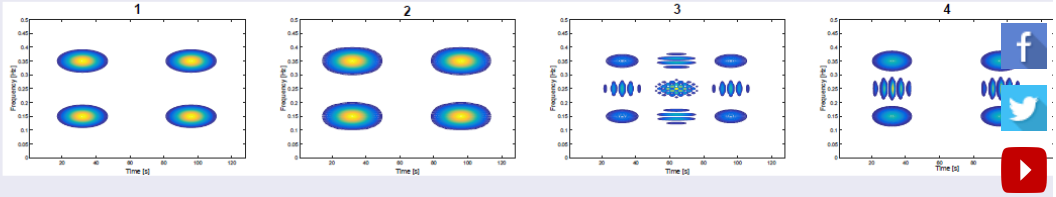
a
b
c
d

No, the answer is incorrect.
Score: 0

Accepted Answers:
a
b
c
d

7)

Four time-frequency distributions, namely WVD, PWVD, SPWVD and Spectrogram of a are given below (not mentioned in order). For questions **7** and **8**, report the answer as s figure number.



7. The PWVD corresponds to Figure _____.

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 4

1 point

8)

8. The SPWVD corresponds to Figure _____.

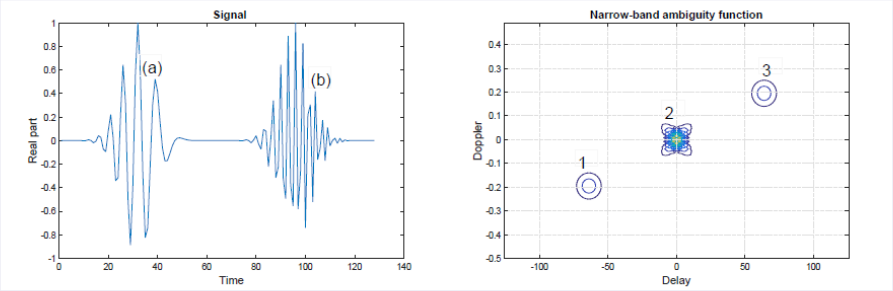
No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 1

1 point

9) *1 point*

9. The signal and its ambiguity function are given below. Choose the correct inferenc from the figure describing the ambiguity function.



(a) **1** and **3** represent the signal components (a) and (b) respectively.
(b) **2** represents the interference term.
(c) Most of the signal's energy is concentrated at **1** and **3**
(d) None of the above.

- a
- b
- c
- d

No, the answer is incorrect.
Score: 0

Accepted Answers:
d

10)

10. If a signal $x(t)$ has its center frequency at 0.3 rad/sec, then the center frequency fo affine transformed signal $x(3t)$ is _____rad/sec (round off the answer to one decim place).

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 0.1

1 point

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