

Ót Pā i 5 μ æ"

Ót E 4 mF Ç k æ"

ELE C ö . B²/ø æA O'@@Íæ" - *U /(M
 ÚOÄ" EÖêe /(|' -md Y8ä Ä mL-+±A O' d Y %
 %og è Â@Öæ" È(Ý' -m" ' -md Y ò M" 6 E
 B.+±d Y T6* %Y ´ E6*UE 4 mF Ç k æ" i Â6
 *L = ' -md Y "A æ" ' » - T - <C.è ó F "@@Í
 L = +±d Y %æ 6 ' 7ÿ+±/§K! ~ r T6 1 M 1
 T6* %

- *U i Â6 æ" U n 4!/§K! ² *L = m Wd Y %æ
 L- u 3 @@@Í§K!0v 3 = m" W@@@Í /§K! " /§K! ,
 p "º U h ž m" W§K! , p %o = 0 # "/§K! , p g
 • æ • n = # "/§K! , p g • æ € " ' 1" Ö o Z
 E6 £ Z m W§K! , p k 4 › m Wd Y %æ ü Wd Y
 %æ 3 U m" W§K! , p ZE=i à Ç "59ü i Z 6*
 Ô*L ß Wd Y %æ U n 4!/§K! ² Ô*L OY ß Wd Y %æ
 ; " ' # i ^ \ 6* Ô*L d Y %æ ± %o - ßº-ß W§
 K! , p %U Ô*L OY 0 Wd Y %æ " i ^ = %o -
 0dº-ß W§K! , p " ' 1" Ö %o = 0 # "i g D n =
 # "i g L • o % & » n 4! K MÄ i Â6 æ" ² € È(Ý D ö
 /8 - 8 â

Bo 3 @@@Í§K! t - 3 = m" W§K! , p "&c;
 E=i *L = d Y %æ & » OY ß Wd Y %æ Pº" U OY ß
 i K¼g Ô*L % Ç v %æ Pº z 4 › %o jº" - "gº" ßº %o
 jº" - "gº â xß"0" - "m Wº 3 %æ Pº k ' d Y Kó P
 = xPº W

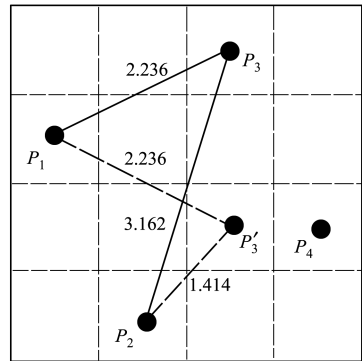
0o & » OY 0 Wd Y %æ Pº 3 U OY 0 i Z Ô*L %
 } 4 g %o jº" - "gº" ßº z 4 › = Ø Pº • *U " ' d Y
 %æ Pº 6* k 4 › U OY 0 i - † /§K! , p Z % Ç v %æ
 Pº z 4 › } 4 g %o jº" - "gº" 0o" OY 0 i - † /§K! ,
 p z 4 › ; (Ý 6 d Y %æ Pº x K! - TC.è = • g g
] U %o %o jº" - "gº" 0o" Pº 0o %o â xᵣ | rᵣ = ß"0"
 - "m +ᵣ 3 iᵣ Wjᵣ â xᵣ | rᵣ = ß"0" - "m +ᵣ 3 jᵣ W -
 gº â xᵣ | rᵣ = ß"0" - "m +ᵣ 3 gᵣ W % @Ä OY 0 i -
 † /§K! , p z 4 › ; d Y %æ Pº C.è " d Y %æ Pº 3 = Ø
 k 4 › UC.è %æ Pº - E +± /§K! , p Z %! Ý d Y Kó
 P = xPº Pº W

o & » OY k Wd Y %æ "xᵣ | k = "x" - "m -
 ß W = • ; 6 d Y %æ Pº Pº - "Pº-ß W 3ü • *U 3
 k - ß Wi % ' "OY k Wd Y %æ 6* ' (Ý U OY k i
 - † /§K! , p Z " Pº %o jº" - "gº" k o %o â xᵣ | rᵣ

= ß"0" - "m +ᵣ 3 iᵣ iº" - "iᵣ-ß Wjᵣ â xᵣ | rᵣ = ß"0"
 - "m +ᵣ 3 jᵣ jº" - "jᵣ-ß W - "gᵣ â xᵣ | rᵣ = ß"0" -
 m +ᵣ 3 gᵣ gº" - "gᵣ-ß W % U OY k i - † /§K! , p
 Z "3 X @Ä 1 /§K! , p z 4 › ¹ (Ý 6 d Y %æ Pº
 Pº - "Pº-ß W x K! C.è " £ 3 - <C.è i %og " @
 i "Ä] m - k + ß Wi @ i % - T! @ i & Ä /§K!
 , p i \ OY k Wd Y %æ 4 z 4 › %o jº" - "gᵣ" k o"
 OY k Wd Y %æ ; (Ý 6 d Y %æ x K! - T - <C.è
 = • g g] U %o %o jº" - "gᵣ" k o" Pº 0o %! Ý d Y
 Kó P = xPº Pº - "Pº-ß Pº W

xo Fú: ' OÑ ,! 7 ¹ = m - ß Wd Y %æ ± = +
 "o OY m Wd Y %æ k 4 › U - † +± - ; ß W §
 K! , p Z %

g ³ ! Í ,! > i ü E i Â6 æ" "Fô*U 7 E æ" U
 1 4! L • ² *L = x Wd Y %æ + ß m g % 6 7 E '
 OÑ ß @@@Í§K! 3 = Ø t 3 g x x W§K! , p "%æ Pº
 = Ø ¼ g 3 Fz U OY ß D OY 0 = y +± /§K! , p %o ßº Z %
 ' OÑ 0 Z "Pº 3 U OY 0 D %o o - † /§K! , p %æ ß"
 x W 0 o Z Ô*L % @Ä - † /§K! , p ; %æ Pº C.è -
 TC.è & Ä +± /§K! , p %æ 0o = Ø U ' k 4 › %æ 0 i
 & " OÑ "OY DE 6 /§K! , p %o o ¹ %o" o W = Ø
 • *U" 3 X @Ä %æ ß" o ; xPº Pº W x K! C.è g
 0 0 ¹ . ß 0" m - <C.è 0 0 g /§K! , p %o
 o +±! @C.è % 9 d] "3 X @Ä %æ 0" o ; xPº
 Pº W x K! C.è g 0 0 ¹ ß x ß x - <C.è ß x ß x g /§
 K! , p %o o +±! @C.è % OY D /§K! , p i @C
 .è g x 0 0 " ß x ß x W £ Z 0 0 g - T! @C.è "m
 /§K! , p %o o = Ø U ' k 4 › %æ %æ x F = Ø k
 4 › U - 8 - ; ß W §K! , p %o" xo Z %

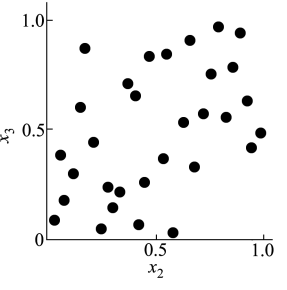
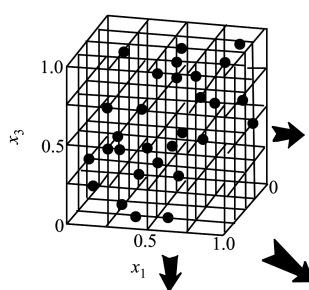
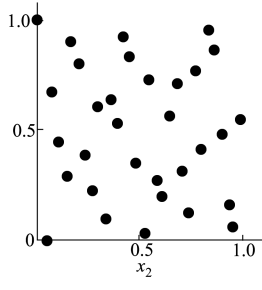
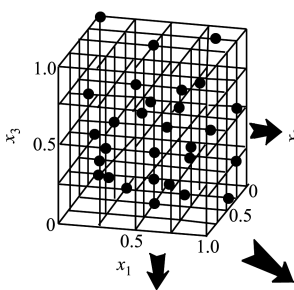


+ ßœi Â6 æ" d Y %æ = Dð8

+ 0¹ + 3 X , g ³ i Â6 ¹ Â@Öæ" %o U
 Xö Äö > a * • Äd › ð 8 ä Ä o U 6 4! /§K! ² Ô
 *L 0 Wd Y %æ 0 ò â " £ 3 d Y %æ 17 & Ä ¹

4! L·2 %û + Z #2‡,8] "i Â6 1 Â@Ö æ" F* æ 67æ³ M1 T6* %s \ i Â6 æ" Ô*L±±d Y

%æ* L! t - ~ r ; W@Ö!§K! "£/§K! ~ r T6* E » Â@Ö æ" %

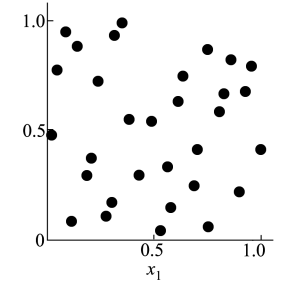
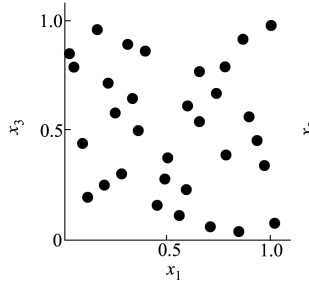
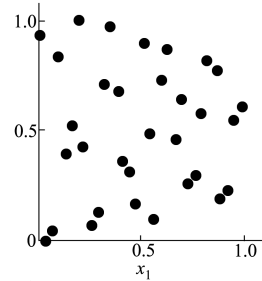
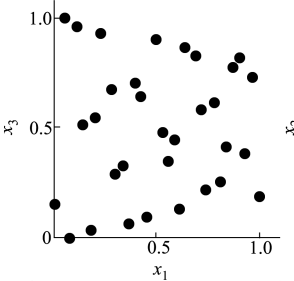


a) 样本点在三维空间分布

b) 样本点在 x2-x3 映射平面分布

a) 样本点在三维空间分布

b) 样本点在 x2-x3 映射平面分布



c) 样本点在 x1-x3 映射平面分布

d) 样本点在 x1-x2 映射平面分布

c) 样本点在 x1-x3 映射平面分布

d) 样本点在 x1-x2 映射平面分布

+ 0æi Â6 æ" 64!/§K! 1 1 4! M1 d Y%æ³ 0 æææææ+ æÂ@Ö æ" 64!/§K! 1 1 4! M1 d Y%æ³ 0

Ö#‡ /(MÚ0Ä"

A O¹d Y±±g %T < %d Y·Füo& d Y±±@ë @Î#K!BmqmFü>ÖZ ú "Q £ & » E CA O¹@Öæ" " Ô*L T g %A O¹d Y mL- ±±# K! \ T ±±% è Â@Ö æ" FöU /(MÚ0Ä" "EÖð&/§K! ~ r T 6* 1 M1 T6* EB·±±< g %' -md YE =ye /(| ' EL8ä Ä ! T g %A T6* Ö ±±A O¹d Y % è Â@Ö æ" - *L = T6* EB·±±' -md Y" L-E =yMËC±±: o E CDÿÖÄ" /(MÚ0Ä" @ÖÄmL- # K! * * : @Î%8L·3A 3öüE /(MÚ0Ä" ú %Dð8 %

/(MÚ0Ä" 3 @Ö!§K! ü - 4!F* - 3 g 1 " j W@Ö!§K!=Ö? 3 g 0v u ±±· Füg b d Y N,, " ü Wd Y N,, F* 3 6&" - Ç>ñ, =Ö' -md Y ~ r % t @Ë->ÖL = - Wg %g m_p × n_p A O¹d Y" U n_p 4!/§K! Z Ô*L m_p Wd Y%æ±->Ö±EM- WT6* EB· ±±< g %d Y m_b × n_b %og' -md Y %N,, ·Füb 1 ' -md Y%æ Füm_b @ÖÄ·Dë< 3 X g

b = 0^b = 0^p %öo

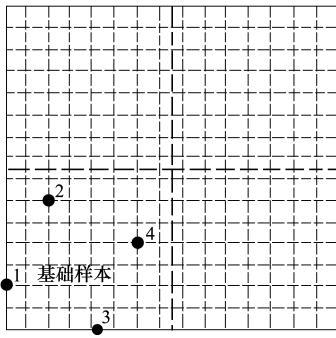
m_b = m_p / b = m_p / 0^b = m_p / 0^p %öo

%öo < 1 %öo < Z "' -md Y 4! · n_b ; , 4 d Y 4! · n_p . - 7! " n_b = n_p %

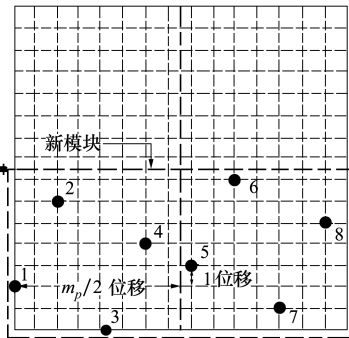
g ³ ! Í ,! >ï üE /(MÚ0Ä" "8L·3 EÖð 8ä Ä - Wg %g ß × 0%ö_p = ß "n_p = 0o d Y' æ ∈ , .g £DÿÖÄDð8 %3 m_p = ß "n_p = 0 ' %öo < 1 %öo < " @ÖÄÄ] d Y N,, ·Füb = x'" -md Y%æ Füm_b = x'+ xüE ³ /(MÚ0Ä" EÖðe /(| ' -md Y Ä] - 3öA O¹d Y±±· Dð8 %û + Z ,8 ' " j W@Ö!§K!=Ö3 = xWd Y N,, "A ü WN,, F*=Ö' -md Y Ê N ~ r %NÄu - *U i Â6 æ" U0Y ß Wd Y N,, Z*L = - W§K! ~ r T6* EB·±±g %g x! 0' -md Y "' + xLb m.g %&c; - *U /(MÚ 0Ä" &' -md YE =ye /(| "Ê N ~ r - † Wd Y N,, %g ³ *† Â@ÖM1! T %ö ü WgK! 6 ßWd Y%æ"U ü Ne /(| Dð8 ZL-/(Ö ßWg K! %' -md Y U!a æ> e /(| Dð8 Z %ö Ö m_p / 0gK! o"9 # U0 ,! æ>/(Ö ßWgK! "' + x&om.g %+ x&oZ 0W' -md Y N,, UK¼ ±±e /(| Dð8 Z 5 g ßWÝ d Y N,, "Ý N,, Z' -md Y U0 ,! æ>/(Ö m_p / 0gK! "9 # U!a æ>/(Ö ßWgK! ; "8ä Ä - 3ö mL-A O¹d Y "' + xüo m.g %

*^ » /(MÚ0Ä" i · m_b 1 b òM" g i · " ' è Â@Ö æ" 6**L =! Ç g %d Y %g ³ ! a] p R è Â@Ö æ" E i "Y ' ý ' - .ú d Y g %

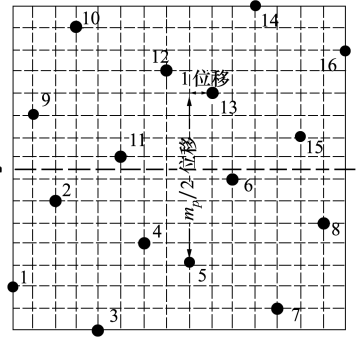
A0_i 0f* ' ? àE WK MÅ%8 - 7 3A 3óø3ú d Y g %A0_i 0f* %



a) 基础样本点分布



b) 样本在水平方向平移



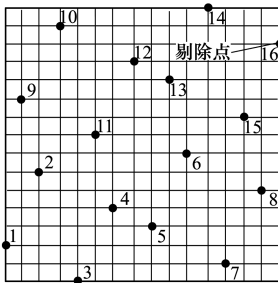
c) 样本在竖直方向平移

+ xæ /(MÚ0Ä" *L=A O¹ d YDð8

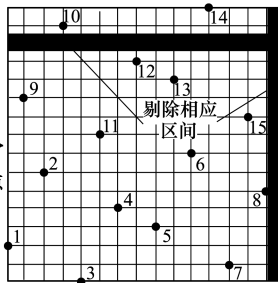
Öž† d Y g %A0_i 0f*

& »! Ç g %A O¹ d Y "EÐð%8o< ¹ %0o< @Î
 OÄÄ] +±i • m_b 6*: \ j • " - *U è Ä@Ö æ
 " " ,! Ò8ä mL- g %d Y %g ³ x : E WKè
 MÅ"Y ' ý ' ³ d Y g %A0_i 0f* "A 0f* EÐð& ï
 • m_b > 7 j " *L= g %! T±±A O¹ d Y %K¼;

@ÐÄü Wd Y%æ @@ÎŠK! Z ð %æ .è "E=W• K'
 C.è - T±±d Y%æ ,%Á gK! %g ³ . Ä@Ö M1
 " T o%- ; 3 - † d Y%æ! , ~ r r j ; W@@Î
 /ŠK! "8äÄ mL- g %d Y %+ "4 ' ³ g %g ß ! 0
 d Y±±A0_i Dð8 %

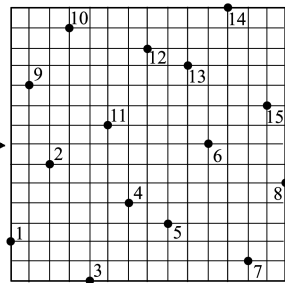


剔除点

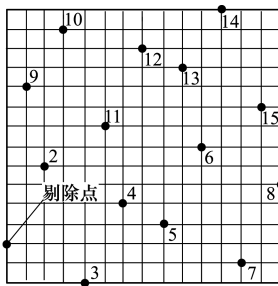


剔除相应
区间

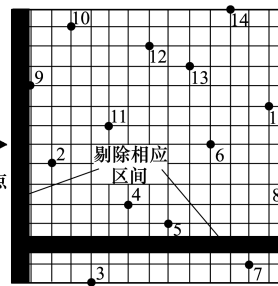
剔除点



a) 剔除样本点和区间得到尺寸为 15×2 样本集

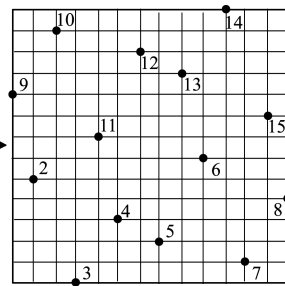


剔除点

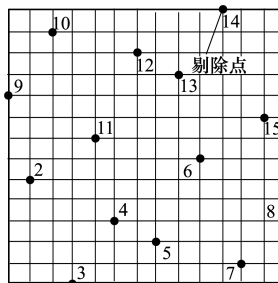


剔除相应
区间

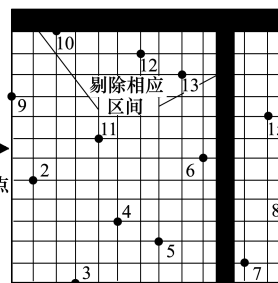
剔除点



b) 剔除样本点和区间得到尺寸为 14×2 样本集

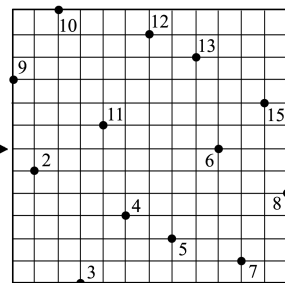


剔除点



剔除相应
区间

剔除点



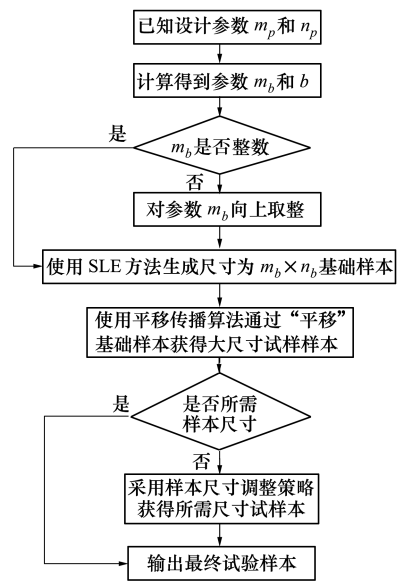
c) 剔除样本点和区间得到尺寸为 13×2 所需样本集

+ "æ g %g ß ! 0 d Y±±A0_i Dð8

æœg ³ 8ä Ä g %g ß ! 0 d Y %o_p = ß "n_p = 0o"
 L->@u - *U è Ä@Öæ' *L = g %D° T ± d Y %EG
 Dô%öo < 1 %öo < Ä] ' -md Y%æ Füm_b = . 0"
 > 7 j ; Ä] m_b = x'E - ' @DÄÄ] m_p = ß %Fô
 *U è Ä@Öæ' *L = g %g ß ! 0 d Y "K¼; ò L- &
 £ Z Wd Y%æ = y • K' 1 = d Y g %A0j %
 @DÄm6 d Y%æ @@ÏŠK! Z ð %æ .è "&c; • K'
 C.è @@ÏŠK! Z ð - E ± d Y%æ 8ä Ä g %g ß ! 0
 d Y " + "Ubm.g %+ Z%æß C.è @@ÏŠK! Z ð
 - E "r u 3 £ • K' %L->@ < ± ì ",! Ò • K' d Y
 %æ-a | Ä@ÖM1'! T " ' U • K' d Y%æ ± 9 #
 E >@ • K' & Ä ± d Y g K! %± ZKaž F 3 o%U +
 "&01 "üoZ "%æß 1 %æßx ÷ £ & Á g K! u ; =0•
 K' "- ; 3 - † ± ß Wd Y%æ! , ~ r 7 j W@è
 @ÏŠK! "8ä Ä mL- g %d Y %è Ä@Öæ" 6* LEÖô
 d Y g %A0j 0f* EL8ä Ä (< g %d Y "9 #
 @†L = d Y ± 7æ³ /ŠK! ~ r 1 M1 T6* %
 Ó/¼ pä! 5µ æ" h4

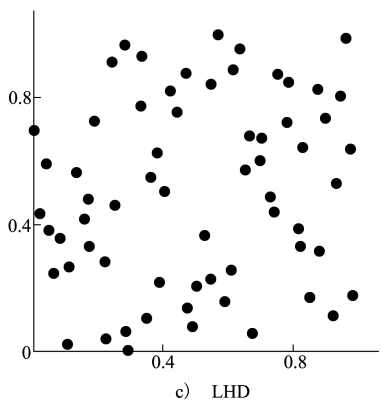
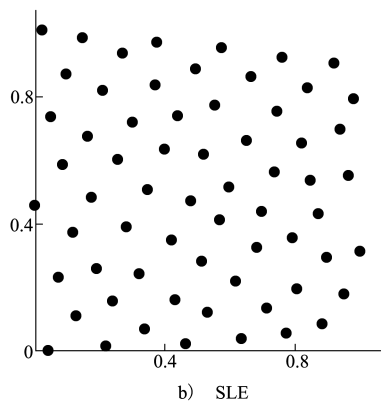
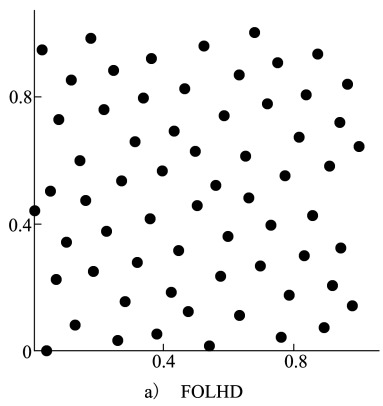
ELE C ö . B²/ø æA O¹@@Íæ" ©M« A O¹
 d Y ± @@Íu(' 1 T6* %U 5)3 V*U@DÄBq#½Ž #
 8 "j 6* (« T6* EB-±±A O¹ d Y "£ E ì U » u
 (' P " @DÄ # K! - A *L = ±±A O¹ d Y T6* 7æ³ %
 è Ä@Öæ" "n/8 - + m.g "α € ' OÑh4 - 8 ä
 ßo4 Ç@@Ïi • m_p ¹ n_p "EÖô%öo < 1 %öo <
 @DÄÄ] ' -md Y%æ Füm_b ¹ d Y N,, • Füb +
 0o Q Ú m_b \ S g j • s - É : \ " F & ï •
 m_b > 7 j +
 o - *U i Ä6 æ' *L = T6* EB-±±g %g m_b ×
 n_b ' -md Y +
 xo - *U /(MÚ0Ä" EÖôe /(| ' -md Y8ä

Ä T g %A O¹ d Y +
 "o Q Ú *L = ±±A O¹ d Y g %\ S\$ Bà@@Í@
 !o s - É : \$ Bà"FFô*U d Y g %A0j 0f* • K' G
 † ± d Y%æ 8ä Ä mL- g %A O¹ d Y +
 o4 Ö8 ¼ "DÄ' - 3öA O¹ d Y %



+ æè Ä@Öæ" "n/8 +

FôU è Ä@Öæ" Ä6 ¹ Ä@Ö .ú æ" t *L = g %
 g x! 0A O¹ d Y "ŠK! 3 0 ò à - + @m.g %\ D°
 + @b¹ @öo p(Ý"è Ä@Öæ" /ŠK! ~ r T6*
 ; i Ä6 æ" = (Ý, € "s è Ä@Öæ" @@Íu(j
 E P » i Ä6 %9 d ¹ + @üoZ Ä@Öæ" ,%! "
 è Ä@Öæ" Ö *L ± d Y%æ *L ! Í t -] 3 0 7
 j W@@ÏŠK! "£ /ŠK! ~ r T6* E E » Ä@Öæ" %



+ @æè Ä@Öæ" Ä6 ¹ Ä@Öæ" A O¹ d Y T6*! D°

#‡A O'14 É ; 3 ½

E CA O'@@Íæ" 3 ý.ú E C ó F %og, 4 *
 • "¬*UE C0Ä" - E,, M0Ä" &N E-%0Ä" 0vE =y
 E C @ÐÄ' 8ä ÄA O' d Y "E 35DBf TFü@ÐÄ#K!
 1 @ÐÄBç#½" Q £ & » T g %A O' d Y %Y ' ý '
 ±± ELE C ö . B²/ø æA O'@@Íæ" è Â@Ö¬*U
 E 4 mF Çk æ" 1 /(MÚ0Ä" "3 T g %A O'
 d Y ±±E CK MÄ™ g < g %' -md Y (E "@@Í
 u(' P » M4 E CA O'@@Íæ" %8L• 3EÖô& :
 9>ñN±±d YE =yT6* 1 u(' "xA " £ ; i Â6 1
 Â@ÖA O'@@Íæ" E =y! D° %
 #Z† d Y T6*"xA

g³ ÇFüüE è Â@Öæ" ±±§K! ~ r T6* "
 Y ' FôU .ú @ñ ó F â- T - <C.è d₁₌ "φ_p 1 -
 < i 6* U & : 9>ñN d YE =y"xA " £ ; i Â6 1
 Â@Öæ" E =y! D° %£ Z "d₁₌ i B· T "φ_p 1 U i B·
 < "•.gA O' d Y /§K! ~ r T6*B· a % .ú @ñ ó
 F ±±± € ø3ú⁻ 8 %

Bo - T - <C.è d₁₌ ó F %- T - <C.è ó
 FNÄu*^ .•dç .ç0v ý ' ", 4 \ - T CA O' d Y
 %æ K! - <C.è d₁₌ " \$ Bà⁻ 8>@o

] U d₁₌ } =] U d₁₌ } = d %q "x_j ç %o
 < Z "m g d Y %æ FÜ" d %q "x_j ç =•.g (< 0Wd Y
 %æ; 1 x_j x K! C.è

$$d \%q "x_j \text{ ç} = d_{ij} = \left[\begin{matrix} n \\ k = \beta \end{matrix} \right] | x_{ik} - x_{jk} |^t \Bigg]^{\frac{\beta}{t}} \text{ " } t = \beta \cdot \phi 0$$

%xo

=• Ö† 1 4! ò â 8 d Y T6*"xA 4 É

n %0		è Â@Ö			Â@Ö			i Â6		
m	ó F	- E i	- i	t i	- E i	- i	t i	- E i	- i	t i
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x	d ₁₌	! Ž "	! Ž "	! Ž"	! Žx"	! Žŕ@	! Ž 0	! Žŕ	! Ž "	Ž i ú
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 .•üφ Uç0v ý ' "A ó F ' -) 3>ñ , \ p ä ∈ 2(4 i
 6* Dè] - < # "G 1 » = Ž ä . % i 6* U =• Dè < g

$$U = \left(\begin{matrix} m-\beta & m \\ i = \beta_j = i + \beta \end{matrix} \right) \left(\begin{matrix} \beta \\ i \end{matrix} \right) d_{ij}^{-1} \text{ %o}$$

ææFôU è Â@Ö&Â@Ö 1 i Â6 .ú æ" 3 X*L = 9
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 d₁₌ "φ_p 1 U - E i & i ÷ t i % =• ŕ 1 0
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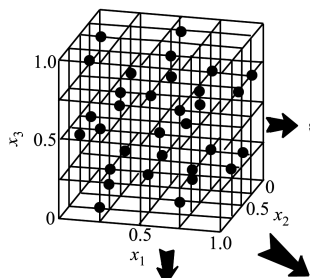
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00	$d_{1\bar{e}}$! ž 0x	! ž	! ž "	! ž	! ž 0	! ž x	! ž x	! ž 0x	ž i i
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	U	"!	0x	" 0xx	0000	xx 0!	x! 0	0 0"	0	úú #0

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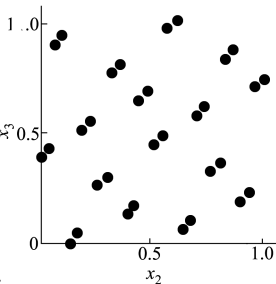
- # K! 2 @ @ Í L = / § K! ~ r T 6 * E E » Â@Õ æ" ±±A O' d Y % g 3 E - ' ú M è Â@Õ æ" d Y T 6* " - * U è Â@Õ 1 Â@Õ æ" U @ @ Í F ü D ° G ò â 8 * L = : 9 > ñ N A O' d Y " £ 9 d - * U $d_{1\bar{e}}$ " ϕ_p 1 U @ ñ ó F & £ E = y " x A " " x A 4 É t i > i = • % ; { 4 ! ò â 1 " i " è Â@Õ æ" d Y T 6 * h € E » Â@Õ æ " % µ & : 9 > ñ N d Y " è Â@Õ æ" U T 6 * i • $d_{1\bar{e}}$ 1 ϕ_p æL = • (Ý t a » Â@Õ æ" % 59 & » @ ñ ó F U " è Â@Õ æ" F Í 6 = • (Ý ' 4 & E B · T " U F 3 ò â 8 - < i 6 * U t i T » Â@Õ æ" " E A ! ; : 9 @ ñ ó F ± 6 : 9 " x A , 4 " 6 * G Ô * L : 9 @ ñ 4 É % Y ' F ò * U G . ú @ ñ ó F & : 9 > ñ N A O' d Y E = y " x A " x : 3 7 E K M Å % + , . g 3 è Â@Õ æ" *L = ±±g % g 0! d Y U 64! / § K! 1 1 4! M 1 L • 2 3 0 % ; + 0 1 , % ! " , ! > i p (Ý è Â@Õ æ" U 64! ò â 8 d Y 3 0 L < e t - / § K! ~ r T 6 * E » Â@Õ æ" " ; i Â6 æ" , % D p %

=• ú‡ Z P 4! ò â 8 d Y T 6*"x A 4 É

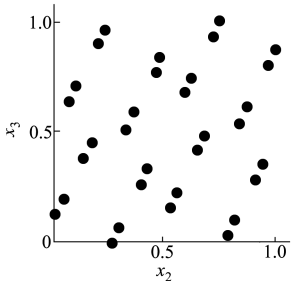
ó F	æ"	d Y g % m ! n								
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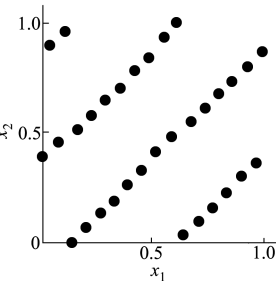
a) 样本点在三维空间分布



b) 样本点在 x2-x3 映射平面分布



c) 样本点在 x2-x3 映射平面分布



d) 样本点在 x1-x2 映射平面分布

#Ž† @ @Íú(' "xA

Y7 & .úA O'@@Íæ' è Â@Ö&Â@Ö' i Â6
 +±@ @Íú(' E =y"xA -A/£ %€ n x# "i Â6 æ" A
 O' O! N" £ â t "xA B! N" t @ ðÄ#K! -
 =• x m.g % =• Z @ ðÄ#K! \ UFz4> g8 'i AFæ,-
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+ æè Â@Ö æ" 64! /§K! 1 1 4! M1 d Y%æ 0

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#Ž† • i A O'

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E6*U ± > ' * • %og)3 N, ±EMæ" "' * • Fô
 *U X Â çP ö ð ç %

ß0 è U * • %éy o"n = 0

$$f_{\%0} = \frac{\beta}{n} - x_{\beta} \cdot 0 \cdot \frac{1}{4} - x_{\beta} \cdot \frac{\%0}{n} \cdot \beta^0 - \beta! \left(\frac{x_{\beta}}{n} - x_{\beta} - x_0 \right)$$

$$- x_{\beta} \cdot x_{\beta} - \frac{\beta}{n} - \frac{\%0}{n} \cdot \beta^0 \cdot x_{\beta} \hat{a} - " \hat{O} \quad \%80$$

ææè 0 • U v k z * • %i o"n = 0

$$f_{\%0} = 0! + \sum_{i=\beta}^0 \binom{0}{i} x_i^0 - \beta! \cdot \frac{\%0}{n} x_i \cdot 0 \hat{O}$$

$$x \hat{a} - " \cdot \beta 0 " \cdot \beta 0 \hat{O} \quad \%00$$

ææè o @U U x O ç i = i U * • % @ x o"n = x

$$f_{\%0} = \frac{\beta}{n!} \left[\beta \beta - \sum_{i=\beta}^x \binom{x}{i} c_i 4 \left(- \sum_{j=\beta}^n \binom{n}{j} \alpha_{ij} \%0 - p_{ij} \cdot 0 \right) \right]$$

$$x \hat{a} ! " \beta \hat{O} " c_i = [\beta \beta 0 \quad . q$$

$$a_{ij} \hat{O} = \begin{bmatrix} \beta! & \beta\textcircled{R} & \cdot & \cdot \\ ! \cdot ! & \beta! & \beta\textcircled{R} & ! \cdot \beta \\ & \cdot & \beta\textcircled{R} & \beta! \\ \beta\textcircled{R} & ! \cdot ! & & \beta! \end{bmatrix}$$

$$p_{ij} \hat{O} = \begin{bmatrix} \beta & \beta\textcircled{O} & \beta & \cdot & \cdot & \beta\textcircled{x} \\ 0 & 0 & \times & \beta & \cdot & !\textcircled{R} & \textcircled{R} \\ 0 & \times & \beta & \times & \beta & \cdot & \textcircled{O}\textcircled{O} & 0 \\ \times & ! & \times\textcircled{R} & 0 & \textcircled{R} & 0 & \cdot & \textcircled{x} \end{bmatrix} \times \beta!^{-x}$$

%oO

xo X=úDU ùi * • %X o"n = ""

$$f_{%oO} = - \sum_{i=\beta}^n \textcircled{R} \cdot \textcircled{R} \textcircled{O} \left[\textcircled{R} \left(\frac{ix_i^0}{-} \right) \right]^{01} \cdot "x \hat{a} !" \hat{O}$$

%! o

ææFôU .úA O'@ @Îæ" è Â@Ö&Â@Ö' i Â6 3
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@x	×	×	!ž!	βž	žî	ž@	ž!"	žy#
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ú‡4 ‡ @ç

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%ç Uxü ç•w] Uç @Uç çç'••Xi6o¹,%& -
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 ••Xi6¹ •Xö6 • " =•Dè< - 8

$$R_{\cdot Xi6} = \sqrt{\frac{\sum_{i=\beta}^K \textcircled{R} f_{%o}^i o - f_{%o}^i o \hat{O}}{\sum_{i=\beta}^K \textcircled{R} f_{%o}^i o - f_{%o}^i o}}$$

$$R_{Xö6} = \frac{\sum_{\beta \leq i \leq K} U_i f_{%o}^i o - f_{%o}^i o}{\sqrt{\frac{\beta}{K} \sum_{i=\beta}^K \textcircled{R} f_{%o}^i o - f_{%o}^i o}}$$

< Z "K g"xA %æ FÛ" f_{%o}^i o¹ f_{%o}^i o³ X g, 4 *
 • U0Yi W'xA %æi 1,L È i ¹ Dpi ú Á i "g K
 W'xA %æpi ú Á t i %,%&t æf A ¹,%&
 - T4 T i A i B < "3 X=•.g)3 N, • m1è
 Ó' mF 1è ÓB.P %

MÅ'ý' - .ú ELE C ö . B²/ø æA O'@ @Îæ" %
 8äÄ4 @ç 8 ä

βoE 4 mF Ç k æ" i Â6 j Oí6* L*L =/§K!
 ~ r T6* EB-±±' -md Y"s @ @Îu(' | { "Q £ &
 » T g %A O'd Y %

Oo /(MÚOÄ" EÖô /(' -md Y6* L EL
 8äÄ/§K! ~ r T6*7æ±±T g %A O'd Y "@Û#
 K! * * : @Î%

o d Y g %A0j 0f** 6* L @î ELE C ö .
 B²/ø æA O'@ @Îæ" EL*L = (< g %d Y "x :
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 xoA O'4 É =• ; ELE C ö . B²/ø æA O'@ @Îæ"
 6* L 5)3 =žd Y T6*¹ @ÛÄu(' "µª]
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)3 N, ý È - .ú 6 uE6 "æ 6 - Ç /8 < v %

