Figure 4:

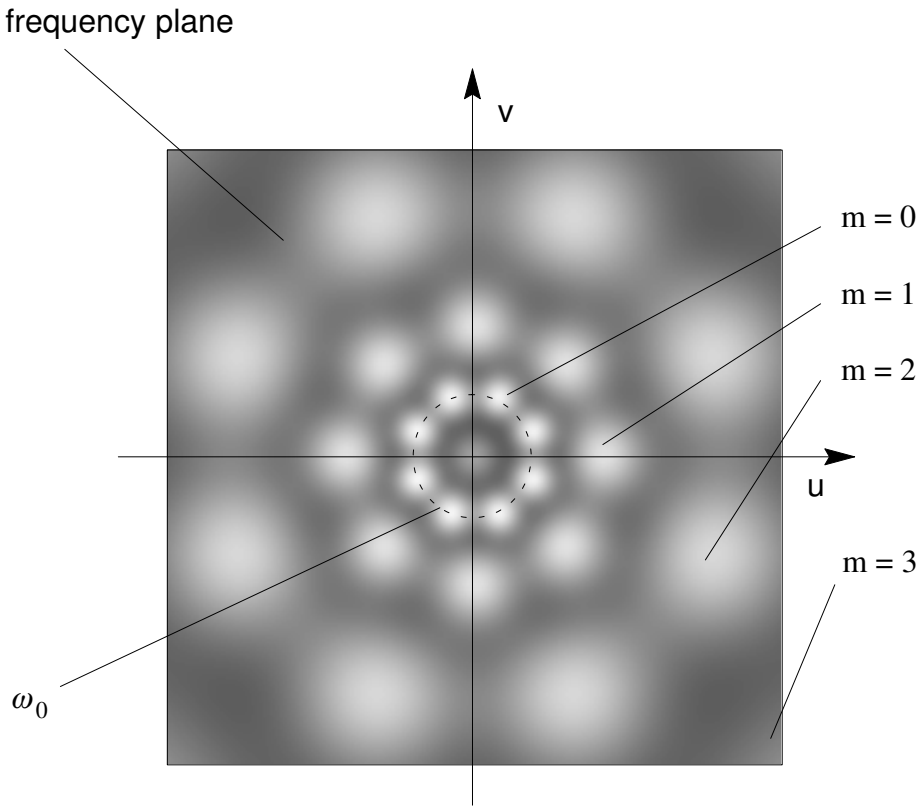


Figure 5:

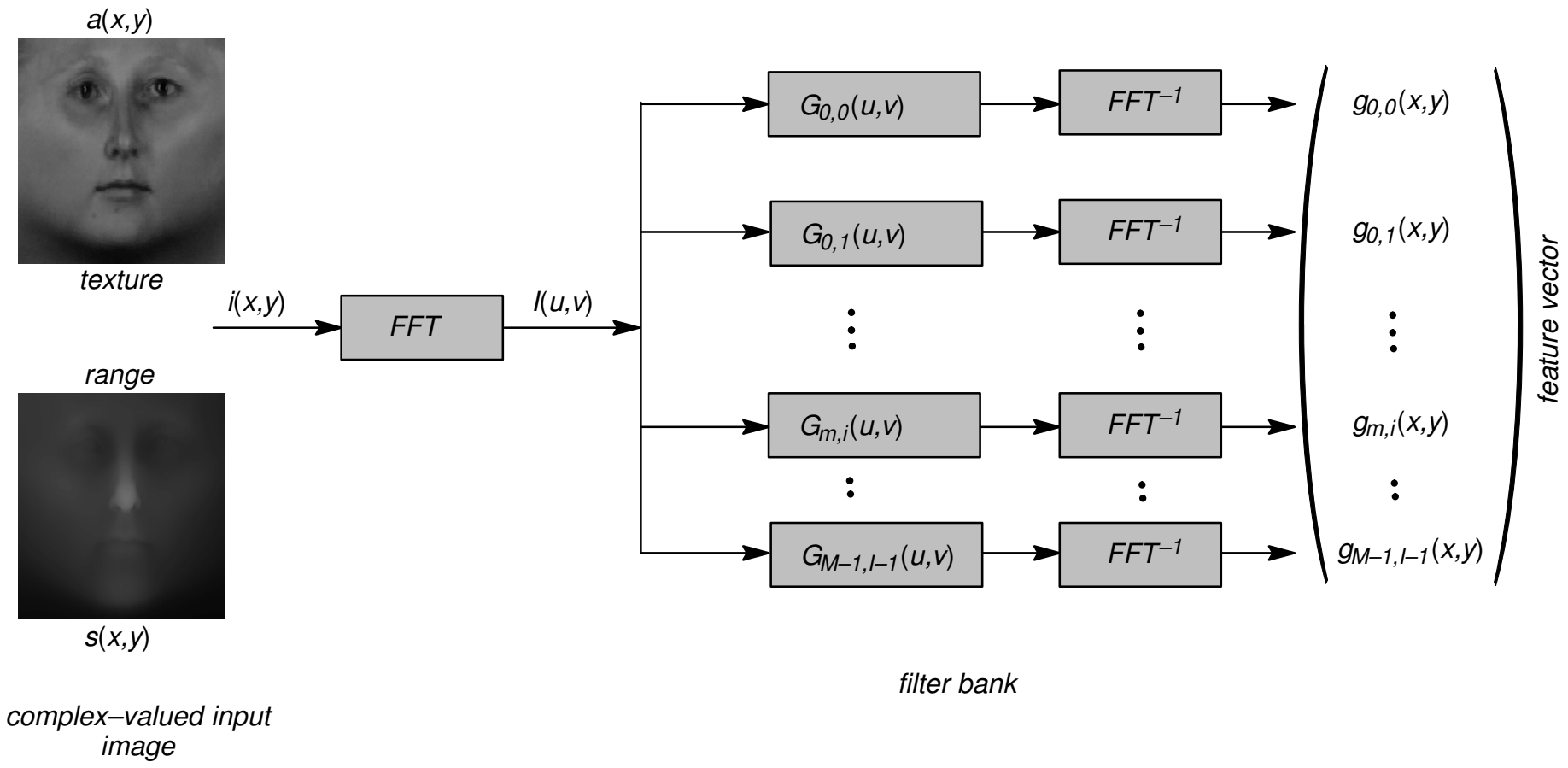

a(x,y)
texture
range
s(x,y)
complex–valued input image
i(x,y)
FFT
I(u,v)
G0,0(u,v)
G0,1(u,v)
Gm,i(u,v)
GM–1,I–1(u,v)
FFT–1
FFT–1
FFT–1
FFT–1
filter bank
g0,0(x,y)
g0,1(x,y)
gm,i(x,y)
gM–1,I–1(x,y)
feature vector

Figure 6:

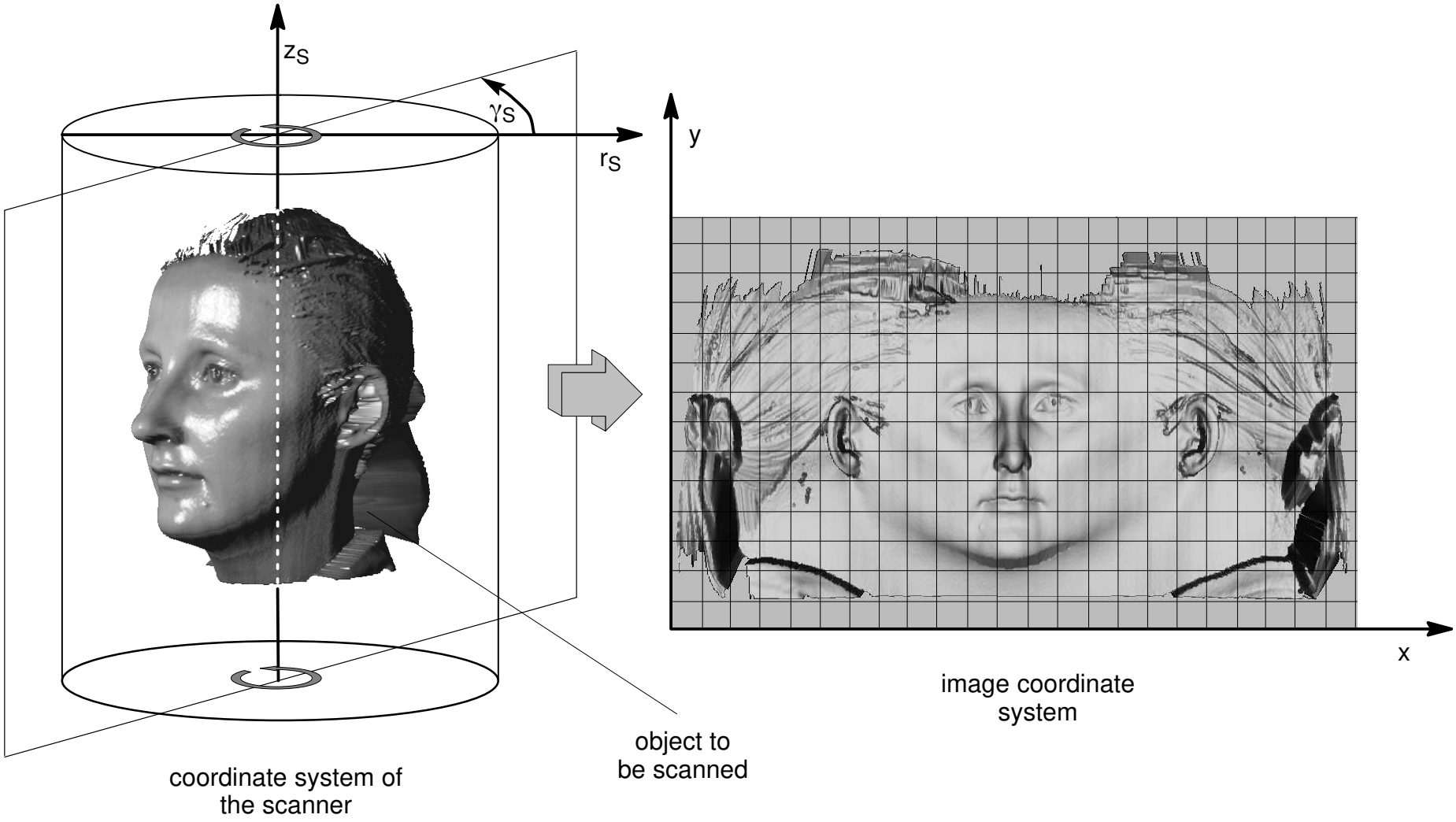

a)
b)
z_S
γ_S
r_S
y
x
coordinate system of
the scanner
object to
be scanned
image coordinate
system

Figure 9:

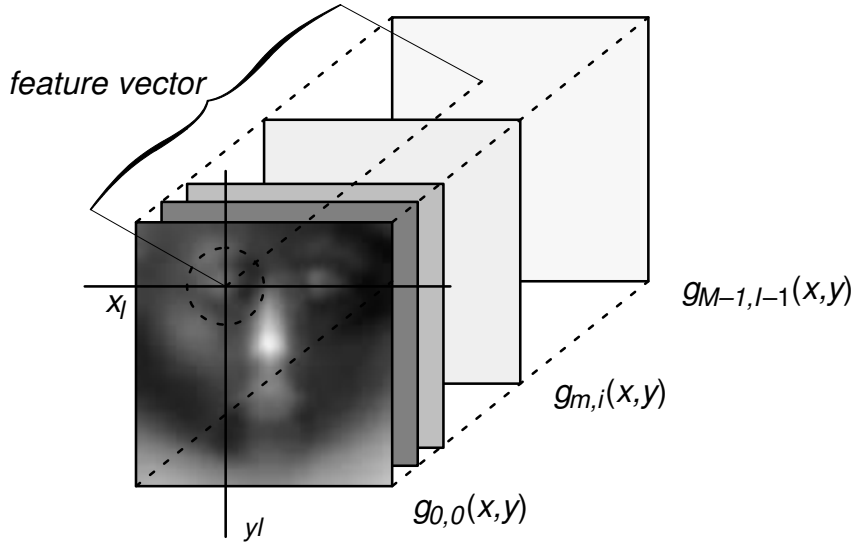


Figure 11:

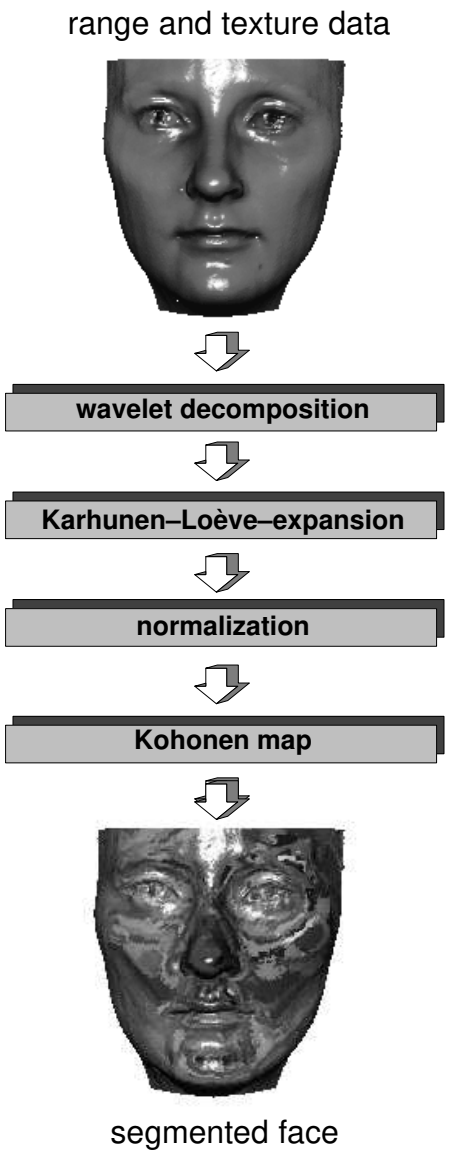

range and texture data
wavelet decomposition
Karhunen–Loève–expansion
normalization
Kohonen map
segmented face

Figure 20:

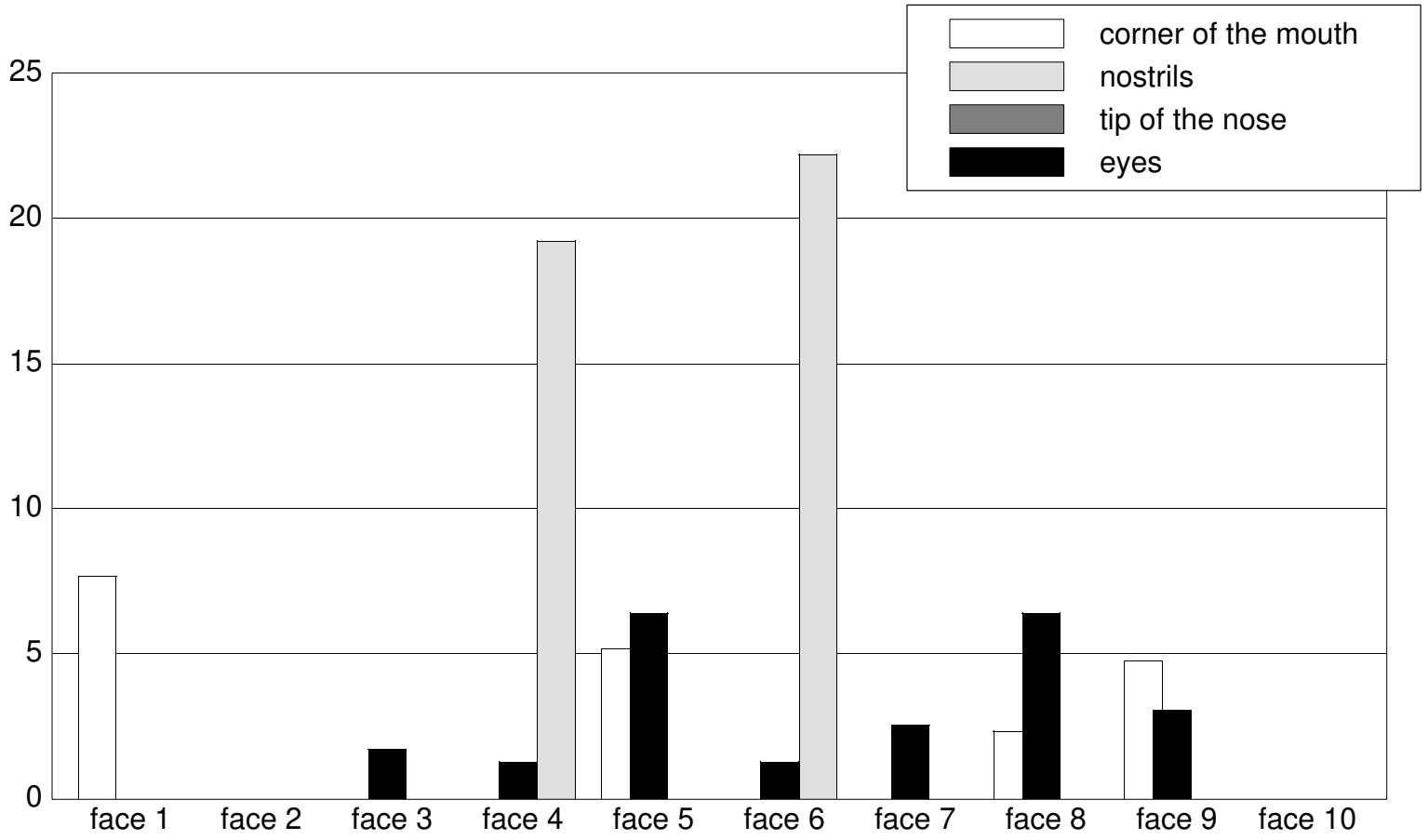
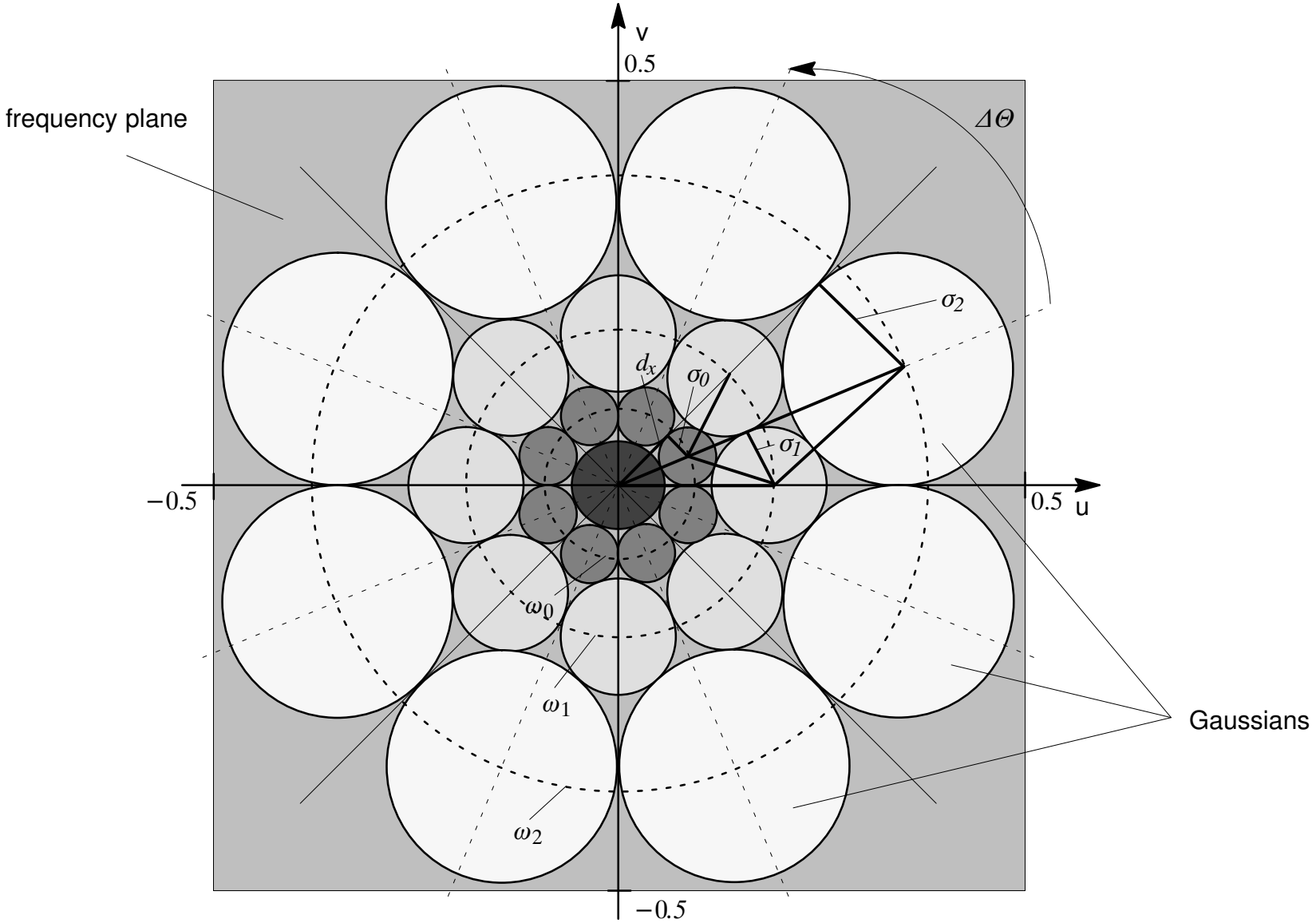

corner of the mouth
nostrils
tip of the nose
eyes
25
20
15
10
5
0
face 1
face 2
face 3
face 4
face 5
face 6
face 7
face 8
face 9
face 10

Figure 22:


v
0.5
frequency plane
$\Delta\Theta$
σ_2
d_x
σ_0
σ_1
−0.5
0.5
u
ω_0
ω_1
ω_2
Gaussians
−0.5