Borrador

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Calculando el punto crítico $\boldsymbol{\alpha(s,t)}$, que está determinado:

$\boldsymbol{\alpha(s,t) = \mu + \frac{(s\theta^2)}{2}}$

$$Q = \begin{pmatrix} -\lambda & \lambda \\ \mu & -\mu \end{pmatrix}$$

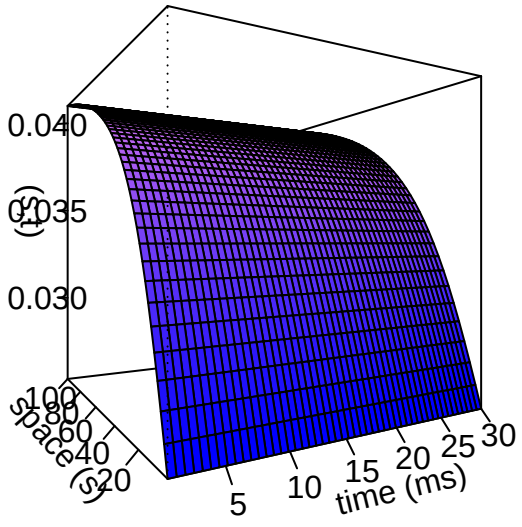
$\pi = (\frac{\mu}{\lambda+\mu}; \frac{\lambda}{\lambda+\mu})$

$\boldsymbol{\alpha(s,t) = log\{\vec{\pi} exp[(Q + Hs)t]\vec{1}\}}$

$\alpha(s,t) = log\{(\frac{\mu}{\lambda+\mu}; \frac{\lambda}{\lambda+\mu}) exp[\begin{pmatrix} -\lambda & \lambda \\ \mu & -\mu + hs \end{pmatrix} t]\vec{1}\}$

```
l<-0.4
u<-0.3
h<-0.1
Q<-matrix(c(-l,u,l,-u),2,2)
H<-matrix(c(0,0,0,h),2,2)
V<-matrix(1,2,2)

#Distribución invariante es un vector de probabilidad pi tal que piQ=0, entonces:
pi1<-l/(l+u)
pi2<-u/(l+u)

space<-seq(length=50, from=1, to=100)
time<-seq(length=50, from=1, to=30) #ms
s<-(space)
t<-(time)

Bw<-function(t,s) {(1/s)*log10(pi2+(exp((h*s))*pi1))}
z<-outer(t,s,Bw)     # La función outer evalua la función Bw en cada punto(si,tj)

nrz<-nrow(z)
ncz<-ncol(z)

# Create a function interpolating colors in the range of specified colors
jet.colors<-colorRampPalette(c("blue","violet"))

# Generate the desired number of colors from this palette
nbcol<-100
color<-jet.colors(nbcol)
# Compute the z-value at the facet centres
zfacet<-z[-1,-1]+z[-1,-ncz]+z[-nrz,-1] +z[-nrz,-ncz]

# Recode facet z-values into color indices
facetcol<-cut(zfacet,nbcol)

persp(t,s,z,theta=-30,phi=0,col = color[facetcol],front="lines",
```

```
      sub="Ancho de banda efectivo de una fuente ON/OFF",
      ticktype = "detailed",xlab="time (ms)",ylab="space (s)",zlab="(s,t)")
```



Ancho de banda efectivo de una fuente ON/OFF