Figure 3. from

galpy: A python Library for Galactic Dynamics

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```
from galpy.potential import DoubleExponentialDiskPotential
dp= DoubleExponentialDiskPotential(normalize=1.,
                                   hr=3./8.,hz=0.3/8.)
dp(1.,0.1) # The potential itself at R=1., z=0.1
-1.1037196286636572
dp.Rforce(1.,0.1) # The radial force
-0.9147659436328015
dp.zforce(1.,0.1) # The vertical force
-0.50056789703079607
dp.R2deriv(1.,0.1) # The second radial derivative
-1.0189440730205248
dp.z2deriv(1.,0.1) # The second vertical derivative
1.0648350937842703
dp.Rzderiv(1.,0.1) # The mixed radial,vertical derivative
-1.1872449759212851
dp.dens(1.,0.1) # The density
0.076502355610946121
dp.dens(1.,0.1,forcepoisson=True) # Using Poisson's eqn.
0.076446652249682681
dp.mass(1.,0.1) # The mass to R=1 and up to |z| = 0.1
0.7281629803939751
dp.vcirc(1.) # The circular velocity at R=1.
1.0 # By definition, because of normalize=1.
dp.omegac(1.) # The rotational frequency
1.0 # Also because of normalize=1.
dp.epifreq(1.) # The epicycle frequency
1.3301123099210266
dp.verticalfreq(1.) # The vertical frequency
3.7510872575640293
dp.flattening(1.,0.1) #The flattening (see caption)
0.42748757564198159
dp.lindbladR(1.75,m='corotation') # co-rotation resonance
0.540985051273488                 # radius
```