Questão 1

September 19, 2019

1 Atomos de um unico cubo na origem

1.1 Atomos dos vertices

$$(0,0,0)$$
$$(1,0,0),(0,1,0),(0,0,1)$$
$$(0,1,1),(1,0,1),(1,1,0)$$
$$(1,1,1)$$

1.2 Atomos das faces

$$(0,0.5,.5),(0.5,0,0.5),(0.5,0.5,0)$$
$$(1,0.5,0.5),(0.5,1,0.5),(0.5,0.51)$$

2 Visualizacao de uma rede CFC

[1]:
```
from vpython import sphere, vector, color

L=int(input('Quantos cubos na rede cristalina? '))
R = 0.1
print()
print('''
Em verde indicamos os atmos posicionados nos vertices dos cubos
''')
for i in range(-L, L+1):
    for j in range(-L, L+1):
        for k in range(-L, L+1):
            sphere(pos=vector(i,j,k), radius=R, color=color.green)

print('''
Em azul indicamos os atmos posicionados nos centros das faces dos cubos
''')
for i in range(-L, L+1):
    for j in range(-L, L):
```

```
        for k in range(-L, L):
            sphere(pos=vector(i,j+.5,k+.5), radius=R, color=color.blue)

for i in range(-L, L):
    for j in range(-L, L+1):
        for k in range(-L, L):
            sphere(pos=vector(i+.5,j,k+.5), radius=R, color=color.blue)

for i in range(-L, L):
    for j in range(-L, L):
        for k in range(-L, L+1):
            sphere(pos=vector(i+.5,j+.5,k), radius=R, color=color.blue)
```

```
<IPython.core.display.HTML object>
```

```
<IPython.core.display.Javascript object>
```

```
Quantos cubos na rede cristalina? 5
```

```
Em verde indicamos os atmos posicionados nos vertices dos cubos
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<IPython.core.display.Javascript object>
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Em azul indicamos os atmos posicionados nos centros das faces dos cubos
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