

In [8]:

```
import matplotlib.pyplot as plt
import numpy as np
```

```
features_4.txt tem o valor X = 10 e o valor Y = 10
features_2.txt tem o valor X = 10 e o valor Y = 20
features_1.txt tem o valor X = 20 e o valor Y = 10
features_3.txt tem o valor X = 20 e o valor Y = 20
features_7.txt tem o valor X = 80 e o valor Y = 30
features_6.txt tem o valor X = 90 e o valor Y = 50
features_5.txt tem o valor X = 100 e o valor Y = 100
features_10.txt tem o valor X = 110 e o valor Y = 60
features_9.txt tem o valor X = 120 e o valor Y = 70
features_8.txt tem o valor X = 140 e o valor Y = 70
```

In [65]:

```
x_labels=['[10,10]', '[10,20]', '[20,10]', '[20,20]', '[80,30]', '[90,50]', '[100,100]', '[110,60]']
```

In [3]:

```
euclidiana = [0.894,0.904,0.905,0.922,0.917,0.924,0.917,0.922,0.924,0.923]
```

In [4]:

```
manhattan = [0.894,0.904,0.905,0.922,0.917,0.924,0.917,0.922,0.924,0.923]
```

In [5]:

```
minkowski = [0.894,0.904,0.905,0.922,0.917,0.924,0.917,0.922,0.924,0.923]
```

In [70]:

```
chebyshev = [0.071,0.131,0.087,0.108,0.163,0.096,0.145,0.145,0.11,0.145]
```

In [82]:

```

fig, ([ax1, ax2], [ax3, ax4]) = plt.subplots(2,2,figsize=(22, 15), sharex=True)

#fig.suptitle('Comparativo da acurácia entre o uso de diferentes métricas de distâncias par

ax1.plot(x_labels, euclidiana, '-.')
ax1.set_xticklabels(x_labels, rotation=45, ha='right')
ax1.set_ylabel('Acurácia Euclidiana')
ax1.grid()

ax2.plot(x_labels, manhattan, '-.')
ax2.set_xticklabels(x_labels, rotation=45, ha='right')
ax2.set_ylabel('Acurácia Manhattan')
ax2.grid()

ax3.plot(x_labels, minkowski, '-.')
ax3.set_xticklabels(x_labels, rotation=45, ha='right')
ax3.set_ylabel('Acurácia Minkowski')
ax3.set_xlabel('tamanho [x,y]')
ax3.grid()

ax4.plot(x_labels, chebyshev, '-.')
ax4.set_xticklabels(x_labels, rotation=45, ha='right')
ax4.set_ylabel('Acurácia Chebyshev')
ax4.set_xlabel('tamanho [x,y]')
ax4.grid()

fig.tight_layout()
plt.show()
fig.savefig('DISTANCIAS.png', dpi=fig.dpi)

```

<ipython-input-82-759e67184f72>:6: UserWarning: FixedFormatter should only be used together with FixedLocator

```
ax1.set_xticklabels(x_labels, rotation=45, ha='right')
```

<ipython-input-82-759e67184f72>:12: UserWarning: FixedFormatter should only be used together with FixedLocator

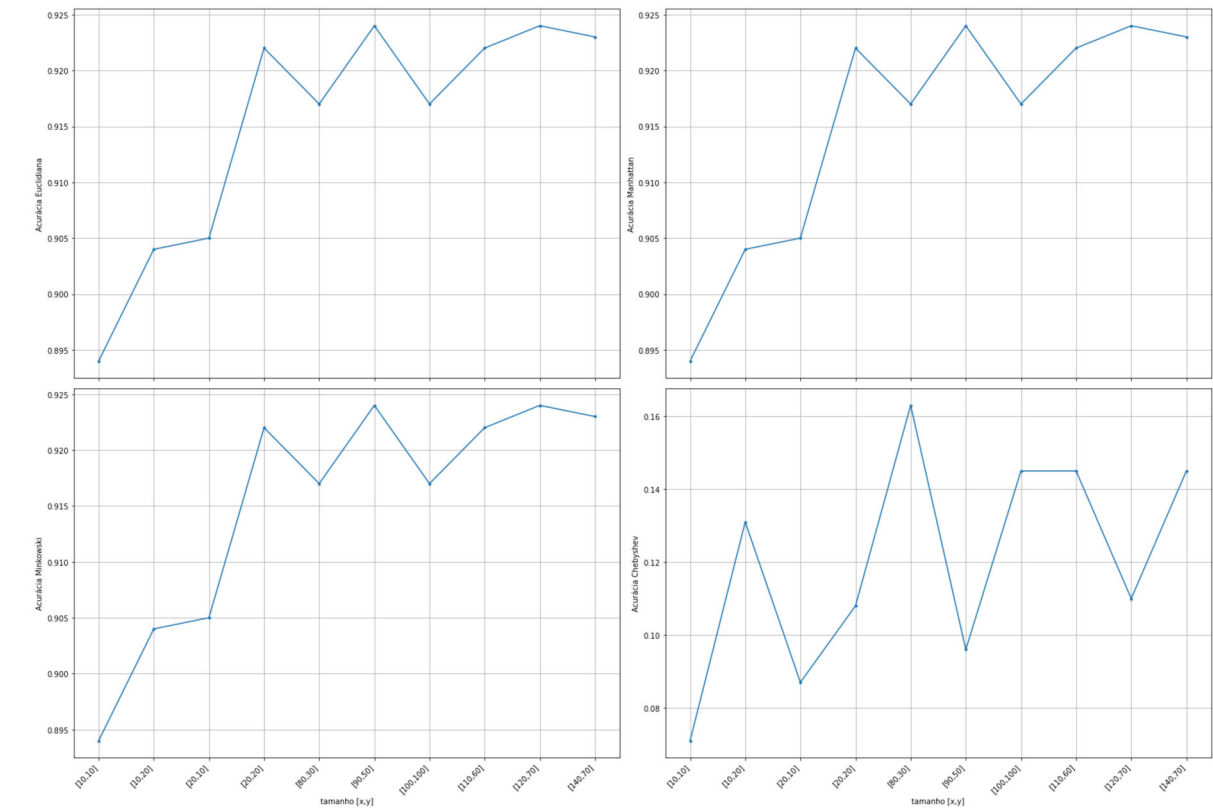
```
ax2.set_xticklabels(x_labels, rotation=45, ha='right')
```

<ipython-input-82-759e67184f72>:17: UserWarning: FixedFormatter should only be used together with FixedLocator

```
ax3.set_xticklabels(x_labels, rotation=45, ha='right')
```

<ipython-input-82-759e67184f72>:23: UserWarning: FixedFormatter should only be used together with FixedLocator

```
ax4.set_xticklabels(x_labels, rotation=45, ha='right')
```



In [53]:

```
fig, ax = plt.subplots(figsize=(10, 5))
ax.plot(x_labels, euclidiana)

ax.set(xlabel='tamanho [x,y]', ylabel='acurácia', title='Acurácia para diferentes tamanhos')
ax.set_xticklabels(x_labels, rotation=45, ha='right')
ax.grid()

fig.savefig("euclidiana.png")
plt.show()
```

<ipython-input-53-40fed57a4321>:5: UserWarning: FixedFormatter should only be used together with FixedLocator

```
ax.set_xticklabels(x_labels, rotation=45, ha='right')
```

