import pandas as pd

import numpy as np

from sklearn import svm, datasets

import matplotlib.pyplot as plt

iris = datasets.load\_iris()

We are taking first two features −

X = iris.data[:, :2]

#y = iris.target # por ahora no usamos target

We will plot the support vector machine boundaries with original data.

x\_min, x\_max = X[:, 0].min() - 1, X[:, 0].max() + 1

y\_min, y\_max = X[:, 1].min() - 1, X[:, 1].max() + 1

h = (x\_max / x\_min)/100

xx, yy = np.meshgrid(np.arange(x\_min, x\_max, h),

np.arange(y\_min, y\_max, h))

X\_plot = np.c\_[xx.ravel(), yy.ravel()]

We need to give the value of regularization parameter, and create a SVM classifier object

C1 = 1.0

svc\_classifier = svm.SVC(kernel='linear', C=C1, decision\_function\_shape = 'ovr').fit(X, y)

Z = svc\_classifier.predict(X\_plot)

Z = Z.reshape(xx.shape)

plt.figure(figsize = (15, 5))

plt.subplot(121)

plt.contourf(xx, yy, Z, cmap = plt.cm.tab10, alpha = 0.3)

plt.scatter(X[:, 0], X[:, 1], c = y, cmap = plt.cm.Set1)

plt.xlabel('Sepal length')

plt.ylabel('Sepal width')

plt.xlim(xx.min(), xx.max())

plt.title('SVC with linear kernel')

