```python
import numpy as np
import matplotlib.pyplot as plt
import os
import image_util

BASE_DIRECTORY = '/home/boris/.config/JetBrains/PyCharmCE2023.2/scratche
picturs/muecke_small/'

def devide_into_blocks(image):
    height, width = image.shape[:2]
    count_x = 10
    count_y = 10
    heightblock = height // count_x
    widthblock = width // count_y
    return heightblock, widthblock


def addupintensities(heightblock, widthblock):
    a = 0
    m = 0
    intensitaetarray = []

    # same as height, width = image.shape[:2]
    for i in range(0, widthblock):
        start_x = (block_x * height) //
        for j in range(0, heightblock):
            start_y = (block_
            a += image[j, i]
            intensitaetarray.apper
        intensitaetarray.append(i)

    n = height * width
    m = a / (n)

    return intensitaetarray

def block_variance(image, heightblock, widthblock):
    height, width = image.shape[:2]
    result = np.zeros((height//heightblock, width//width
    start_x = 0
    start_y = 0
                                                #Proble
    for x in range(0, block_x):
        start_x = (block_x * height) //
        for i in range(0, height, heightb
            start_y = (block_
            for y in range(0
                fo




            variance_intensity
    return result, heightblock, widthblock


def compute_var(intensitaetarray, m, n):
    var = 0
```

```
56                  tmp  =    0
57                  for  i    in   intensitaetarray:
58                                   tmp  +=   ((i  -    m)   **   (i   -    m)
59                                   print(tmp)
60                                   var  =    1    /    n    **   tmp
61                  print('The    variance  s²   of   original  image    is:  ',
62
63                  return    result
64
65 def    main(image,    widthblock,    heightblock,   intensitaetsarray,  block_x
   start_x,  start_y):
66                  widthblock,    heightblock    =    devide_into_blocks(image)
67                  for  x    in   range(block_x):
68                                   for  y    in   range(block_y):
69                                                print("Start   X    is
                        Blöcke
70
71                  intensitaetsarray   =    addupintensities(heightblock, widthbl
72                  for  x    in   range(block_x):
73                                   for  y    in   range(block_y):
74                                                print("Dies    ist  da
                        intensitaetsarray)              #Wird    wieder    nur(!)    Tr
75
76                  #Frist    Image
77                  image     =    image_util.read(os.path.join(BASE_DIRECTORY,
       'muecke_small_0.jpg'),   as_gray=True)
78                  widthblock,    heightblock    =    devide_into_blocks(image)
79
80                  result    =    block_variance(block_x,  block_y,  count_x,  co
81                  for  x    in   range(block_x):
82                                   for  y    in   range(block_y):
83                                                print(result)
84
85                  BASE_DIRECTORY =    '/home/boris/.config/JetBrains/PyCharmCE2
       scratches/picturs/muecke_small/'
86                  #    Consequtive    Images
87                  num_image_files     =    len(image_files)
88                  for  file in   image_files:
89                                   devide_into_blocks(file)
90                                   addupintensities(heightblock, widthblock)
91                                   block_variance(block_x,  block_y,  count_x
92                                   for  x    in   range(block_x):
93                                                for  y    in   range(b
94                                                             pr
95
96 if     __name__   ==   "__main__":
97                  main()
98
99
100
```