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src/polyak.py
                  Thu Mar 21 11:49:10 2024
 1: import numpy as np
 2:
 3: def iterate(self):
 4:
        self. x value = self. start
 5:
        self. old x value = None
 6:
        self. f star = 0
 7:
        self. iteration = 0
 8:
        self._converged_value = False
 9:
        self. grad value = self._gradient(self._x_value)
10:
11:
        vield self.state dict()
12:
13:
        while not self. converged value:
14:
             if self. max iter > 0 and self. iteration > self. max iter:
15:
                break
16:
            numerator = self. function(self. x value) - self. f star
17:
             self. grad value = self. gradient(self. x value)
18:
             denominator = np.dot(self._grad_value, self._grad_value) # sum of element-wise products
19:
             self._old_x_value = self._x_value
20:
             step = numerator/denominator
21:
             self._x_value = self._x_value - step * self._grad_value
22:
             self. converged value = self. converged(self. x value, self. old x value)
23:
             vield self.state dict()
```