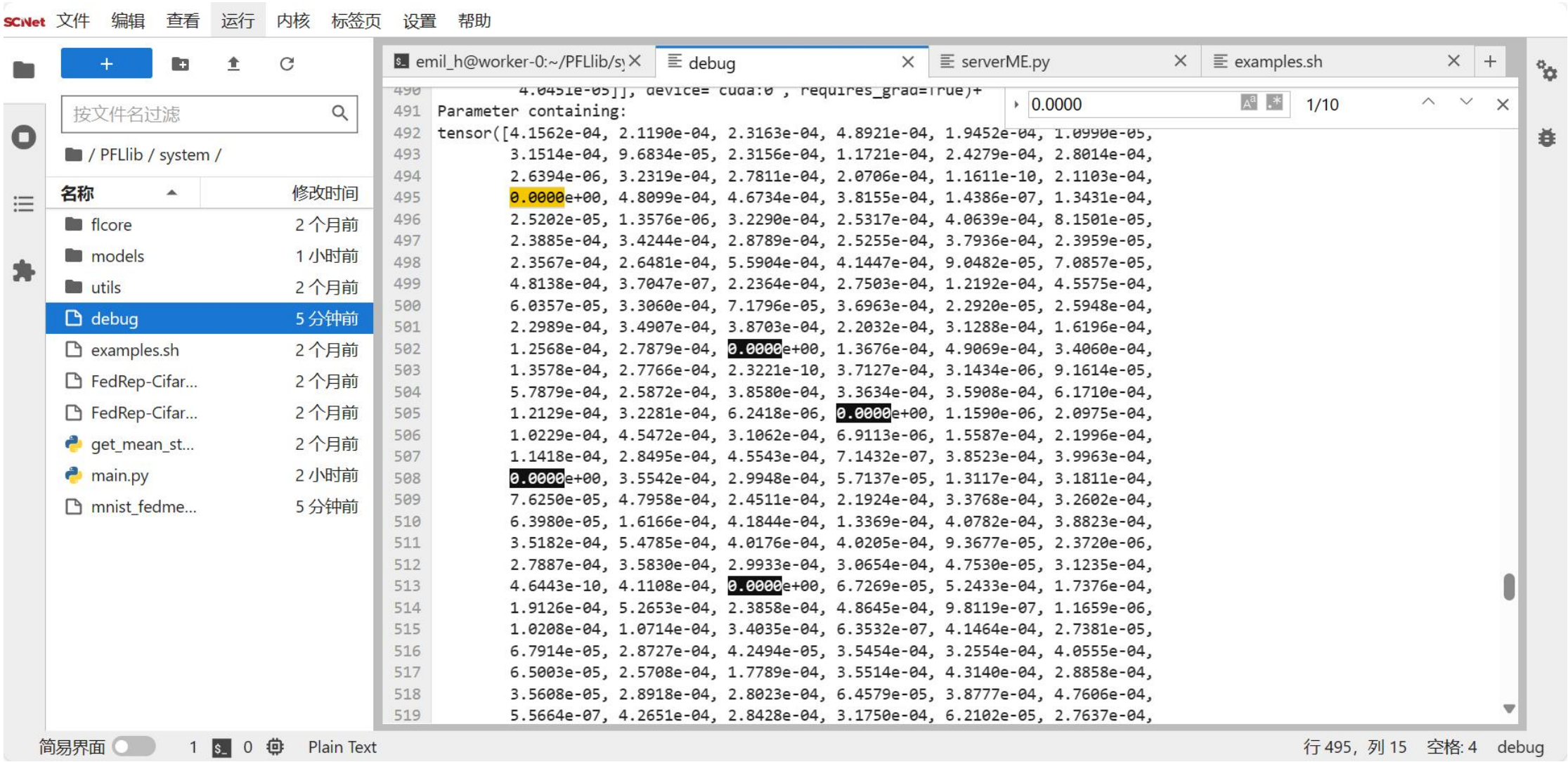
```python
def generate_sigma(self):
    assert (len(self.uploaded_models) > 0)
    # 计算上传参数的标准差
    if self.model_sigma == None:
        return
    for param in self.model_sigma.parameters():
        param.data.zero_()
    for w, client_model in zip(self.uploaded_weights, self.uploaded_models):
        for sigma, client_param, global_param in zip(self.model_sigma.parameters(), client_model.pa
            sigma.data += pow((client_param.data - global_param.data), 2)*w
    for sigma in self.model_sigma.parameters():
        sigma.data = torch.sqrt(sigma.data)

def update_bias(self):
    for uploaded_model, id in zip(self.uploaded_models, self.uploaded_ids):
        for bias, local_param, global_param, sigma in zip(self.local_bias[id].parameters(), uploade
            bias.data += self.sigma_lr*self.div(local_param.data-global_param.data, sigma.data)

def send_models_ME(self):
    assert (len(self.clients) > 0)
    if self.model_sigma == None:
        self.model_sigma = copy.deepcopy(self.global_model)
        self.send_models()
    else:
        for client in self.clients:
            start_time = time.time()
            local_model = copy.deepcopy(self.global_model)
            for param, bias, sigma in zip(local_model.parameters(), self.local_bias[client.id].para
                param.data += bias.data*sigma.data
            client.set_parameters(local_model)

            client.send_time_cost['num_rounds'] += 1
            client.send_time_cost['total_cost'] += 2 * (time.time() - start_time)
```

每轮更新当中
服务器端：
（1）generate_sigma()根据上传的模型参数，计算模型参数标准差sigma
（2）update_bias()更新bias(bias即为下传模型时使用的参数
（3）send_model_BS()下传模型。第一轮时使用原本的send_model()，第二轮开始使用bias和sigma下传个性化的模型

当前问题：第二轮参数出现Nan
sigma为0?



简化版本：未使用sigma,
直接更新并使用bias

强于FedAvg与FedProx
（0.98）

```
Evaluate global model
Averaged Train Loss: 0.0089
Averaged Test Accurancy: 0.9884
Averaged Test AUC: 0.9984
Std Test Accurancy: 0.0056
Std Test AUC: 0.0010
------------------------ time cost ------------------------ 67.

Best accuracy.
0.9892049348869089

Average time cost per round.
47.99732605171204
File path: ../results/mnist_FedAvg_test_0.h5

Average time cost: 96051.19s.
Length:  2001
std for best accurancy: 0.0
mean for best accurancy: 0.9892049348869089
All done!

Storage on cpu
--------------------------------------------------------------------
Total Tensors: 36085612         Used Memory: 93.31M
--------------------------------------------------------------------
```