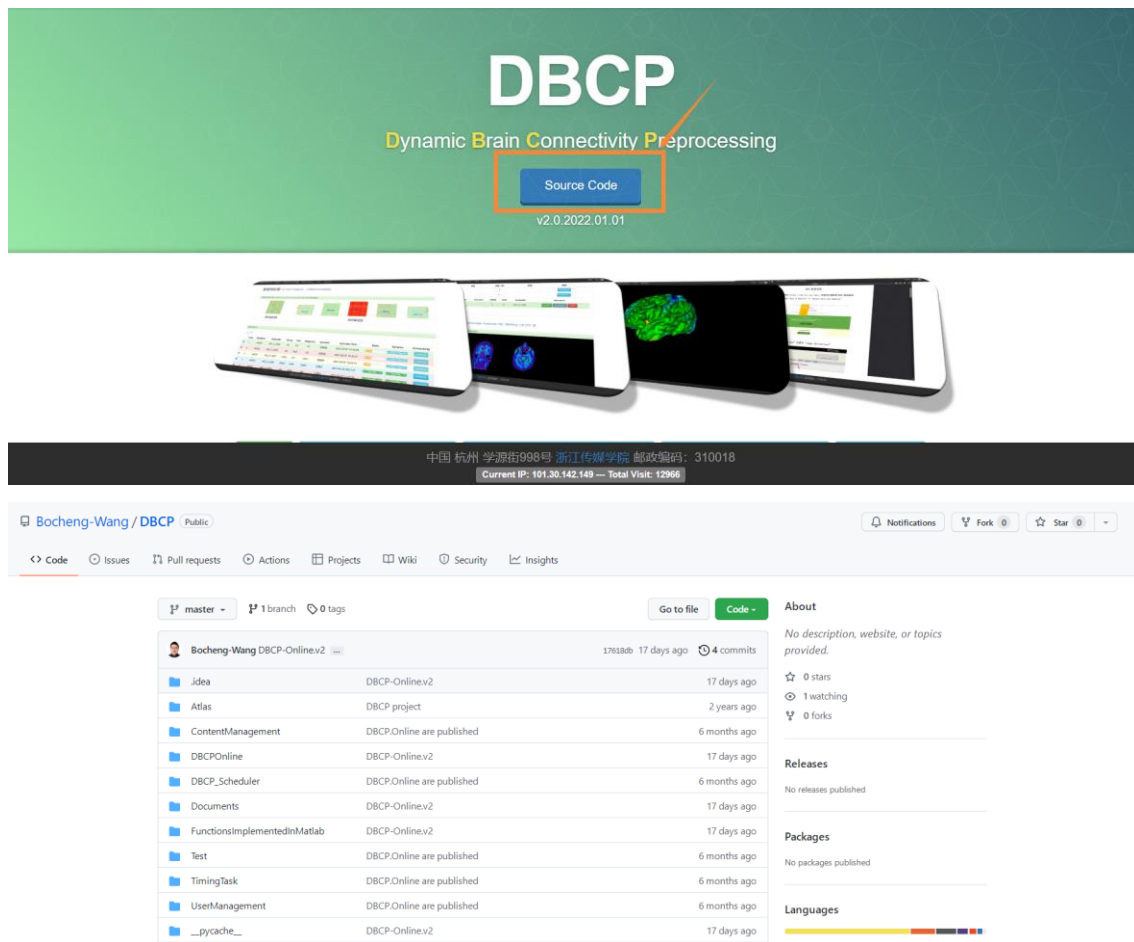


DBCP 使用说明

1. 在 DBCP 项目主页 (<http://dbcp.cuz.edu.cn/>) 如下图, 点击 Source Code 按钮, 可在跳转页面查看源代码。



2. 选择开放注册或者登陆



3. 在开放注册页面, 输入用户名、密码、确认密码、邮件地址、单位、用处及验证码完成注册, 如下图:

开放注册

用户名:

密码:

确认密码:

邮件地址:

单位:

用处:

验证码: 

4. 注册申请需要后台审核，审核完成后，在登陆界面，输入用户名和密码登录网站，如下图：

登录

用户名:

密码:

[忘记密码?](#)



5. 登陆后，显示 DBCP-Online/数据准备界面，如下图：

DBCP-Online 上传 MRI/fMRI 数据 ADNI协议数据已

结构磁共振数据

- Acquisition Plane=SAGITTAL; Acquisition Type=3D; Coil=Systems; Matrix X=256.0 pixels; Matrix Y=256.0 pixels; MSequence=GR; Slice Thickness=1.2 mm; TE=3.2 ms; T1=...

静态磁共振数据

- Field Strength=3.0 tesla; Flip Angle=80.0 degree; Manufacturer=Philips Medical Systems; Matrix X=64.0 pixels; Matrix Y=64.0 pixels; Mfg Model=Intera; Pixel Spacing X=3.3 mm; Pixel Spacing Y=3.3 mm; Pulse Sequence=GR; Slices=6720.0; Slice Thickness=3.3 mm; TE=30.0 ms; TR=3000.0 ms;

磁场分布

- Acquisition Plane=AXIAL; Acquisition Type=3D; Coil=SENSE-Head-R; Field Strength=3.0 tesla; Flip Angle=10.0 degree; Manufacturer=Philips Medical Systems; Matrix X=256.0 pixels; Matrix Y=256.0 pixels; Matrix Z=104.0; Mfg Model=Intera; Pixel Spacing X=1.0 mm; Pixel Spacing Y=1.0 mm; Pulse Sequence=GR; Slice Thickness=3.0 mm; TE=4.6 ms; T1=0.0 ms; TR=20.0 ms; Weighting=T2;

6. 该界面主要分为三部分：上传 MRI/fMRI 数据、数据管理和数据可视化。

7. 在上传 MRI/fMRI 数据部分，点击“+上传数据(DICOM 格式的压缩文件, ‘*.zip’)”，在弹出界面选择上传压缩文件。压缩文件的命名方式由数据库版本和受试者 ID 共同组成，例如“ADNI2_006_S_4153.zip”，命名不正确无法上传。如下图：

上传 MRI/fMRI 数据 ADNI协议数据已支持

结构磁共振数据

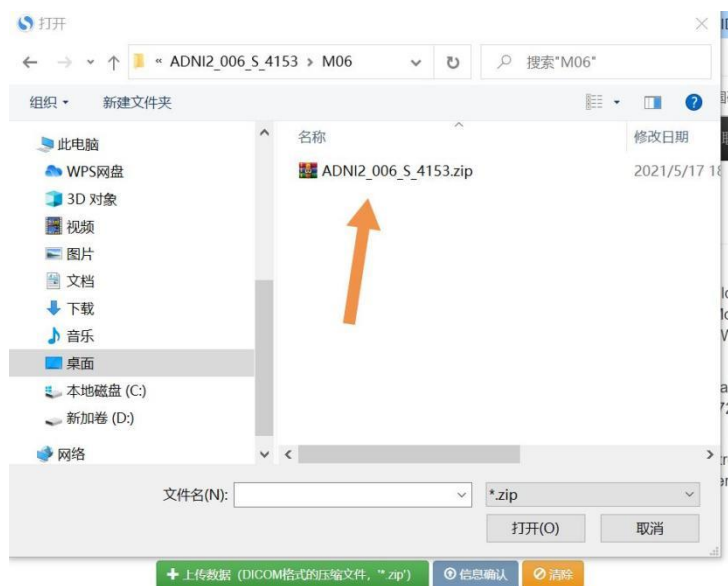
- Acquisition Plane=SAGITTAL; Acquisition Type=3D; Coil=SENSE-Head-8; Field Strength=3.0 tesla; Flip Angle=9.0 degree; Manufacturer=Philips Medical Systems; Matrix X=256.0 pixels; Matrix Y=256.0 pixels; Matrix Z=170.0 ; Mfg Model=Intera; Pixel Spacing X=1.0 mm; Pixel Spacing Y=1.0 mm; Pulse Sequence=GR; Slice Thickness=1.2 mm; TE=3.2 ms; TI=0.0 ms; TR=6.8 ms; Weighting=T1;

静息态磁共振数据

- Field Strength=3.0 tesla; Flip Angle=80.0 degree; Manufacturer=Philips Medical Systems; Matrix X=64.0 pixels; Matrix Y=64.0 pixels; Mfg Model=Intera; Pixel Spacing X=3.3 mm; Pixel Spacing Y=3.3 mm; Pulse Sequence=GR; Slices=6720.0 ; Slice Thickness=3.3 mm; TE=30.0 ms; TR=3000.0 ms;

磁场分布

- Acquisition Plane=AXIAL; Acquisition Type=3D; Coil=SENSE-Head-8; Field Strength=3.0 tesla; Flip Angle=10.0 degree; Manufacturer=Philips Medical Systems; Matrix X=256.0 pixels; Matrix Y=256.0 pixels; Matrix Z=104.0 ; Mfg Model=Intera; Pixel Spacing X=1.0 mm; Pixel Spacing Y=1.0 mm; Pulse Sequence=GR; Slice Thickness=1.0 mm; TE=4.6 ms; TI=0.0 ms; TR=20.0 ms; Weighting=T2;



8. 打开所选压缩文件，填写研究组、访问时间及年龄后，点击“开始上传”即可上传数据，或者点击“取消”取消上传。



9. 检查压缩文件大小约几十兆到几百兆不等，上传时间在 3-5 分钟左右。

10. 数据上传完成后，在数据管理部分可以看到上传数据相关信息，点击“modification”按钮或左侧“+”可显示可视化、删除操作。

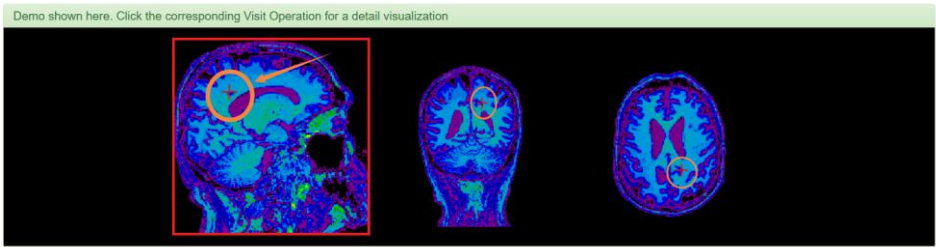
数据管理 李蕾 已上传数据，查看受试者详细信息，请点击下方“+”

Data Store									
搜索									
	受试者ID	性别	教育 (年)	职业	操作				
-	001_S_0001	Male	20	Seller	Modification				
Index	Phase	Diagnosis	Visit_age	Visit_time	MMSE	CDR	SubjectID	Operation	
1	M12	HC	20	-	0	0	001_S_0001	CRF Y	Visualization
2	M06	EMCI	40	-	0	0	001_S_0001	CRF Y	Visualization
3	M03	LMCI	40	-	0	0	001_S_0001	CRF Y	Visualization

显示第 1 到第 1 条记录，总共 1 条记录

11. 在数据可视化部分，显示样例相应侧视图、后视图及俯视图，光标停留在相应样例图例上可更改样例大小，单击一个样例图示改变红色十字标位置，可以看到另外两个图例相应红色十字标位置变化，单击相应的访问操作可查看详细信息。

数据可视化 采用专业医学影像数据预处理工具 Brainbrowser, FreeSurfer, FSL, fMRIprep, CIFTIFY 等



12. 数据预处理界面分为大脑连接、预处理队列两部分，如下图所示：



13. 大脑连接部分，显示静态脑连接和动态脑连接。



14. 预处理队列部分，可显示已上传数据相关信息，以及对已上传数据静态、动态脑连接的预处理进度，预处理时间一般在 4-6 小时。

15. 点击 Download 按钮，可以下载大脑连接矩阵数据。

预处理队列

搜索...

	Index	DataBase	SubjectID	Group	Visit	Diagnosis	Uploader	Uploaded Time	Static	Dynamic	Connectivity
+	1	ADNI2	006_S_4153	AD	SC	AD	李馨	2021-05-18 16:28:58	Finished	Finished	Download
+	2	ADNI2	002_S_0298	LMCI	M48	LMCI	王博丞	2021-05-18 08:59:08	Finished	Finished	Download
+	3	ADNI2	002_S_2010	EMCI	M48	EMCI	Aaron08131	2021-05-17 20:47:11	Finished	Finished	Download
+	4	ADNI2	002_S_2010	EMCI	M24	EMCI	Aaron08131	2021-05-17 20:40:37	Finished	Finished	Download
+	5	ADNI2	002_S_2010	EMCI	M12	EMCI	Aaron08131	2021-05-17 20:25:56	Finished	Finished	Download
+	6	ADNI2	002_S_2010	EMCI	SC	EMCI	Aaron08131	2021-05-17 20:24:17	Finished	Finished	Download
+	7	ADNI2	002_S_0298	EMCI	M03	EMCI	王博丞	2021-05-17 15:33:19	Finished	Finished	Download
+	8	ADNI2	002_S_0298	HC	SC	HC	Test	2021-05-07 10:43:58	Finished	Finished	Download
+	9	ADNI2	002_S_0297	AD	M24	AD	Test	2021-05-07 10:43:27	Finished	Finished	Download
+	10	ADNI2	002_S_0297	LMCI	SC	LMCI	Test	2021-05-07 10:43:13	Finished	Finished	Download

显示第 1 到第 10 条记录，总共 16 条记录 每页显示 10 条记录

16. KBCA Analysis 界面显示当前 KBCA 任务情况，包含已完成、正在运行、等待调度及失败的任务数量，同时显示运行服务器、空闲服务器、宕机服务器数量。如下图所示：

KBCA Analysis KBCA Analysis

共计 KBCA 任务: 1359 | 已完成: 1273 | 正在运行: 0 | 等待调度: 0 | 失败: 86 | 运行服务器: 0 | 空闲服务器: 1 | 宕机服务器: 0

	ModallD	Source	Subject	Visit	Group	Uploader	Calculation Progress	Status	IF Failed	Connectivity	endTime
+	1737	ADNI2	013_S_4985	M24	LMCI	王意培	Finished			Download	2021/10/09 11:20:10
+	1740	ADNI2	073_S_2153	M24	EMCI	Aaron08131	Finished			Download	2021/10/09 11:20:08
+	1734	ADNI2	073_S_4216	M48	EMCI	Aaron08131	Finished			Download	2021/09/24 23:57:06
+	1732	ADNI2	073_S_4216	M12	EMCI	Aaron08131	Finished			Download	2021/09/24 22:45:06
+	1729	ADNI2	073_S_4216	SC	EMCI	Aaron08131	Finished			Download	2021/09/24 21:15:05
+	1728	ADNI2	073_S_2264	M36	EMCI	Aaron08131	Finished			Download	2021/09/24 18:22:59

17. 在页面上方导航栏有 DBCP 项目、DBCP 项目主页、项目简介、项目组成员、研究现状与成果、DBCP-Online 及联系我们选项。在研究现状与成果界面显示目前研究进展，包含相关论文及研究基础，通过点击标题可以跳转相应文章。如下图所示：

DBCP项目 DBCP项目主页 项目简介 项目组成员 研究现状与成果 DBCP-Online 联系我们 当前:

研究进展 * 博导一作、通信

2021

- Sheng J*, Wang B, Zhang Q, et al. Identifying and characterizing different stages toward Alzheimer's disease using ordered core features and machine learning[J]. Heliyon, 2021: e07287.

2020

- Sheng J*, Liu Q, Wang B, et al. Characteristics and variability of functional brain networks[J]. Neuroscience letters, 2020, 729: 134954.

2019

- Sheng J*, Wang B, Zhang Q, et al. A novel joint HCPMMP method for automatically classifying Alzheimer's and different stage MCI patients[J]. Behavioural brain research, 2019, 365: 210-221.
- Sheng J*, Wang B, Ma Y, et al. Improved parallel MR imaging with accurate coil sensitivity estimation using iterative adaptive support[J]. Biomedical Signal Processing and Control, 2019, 51: 73-81.

研究基础

- 本项目负责人及项目组成员具备较高科研素质，从事多年科学研究，作为主要成员负责/参与多项国家、省部级科研项目和系统研发。自2018年以来，项目负责人作为主要成员参与国家自然科学基金面上资助项目《联合脑成像网络与基因分析预测阿尔茨海默症》，在多模

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Current IP: 101.30.142.149 — Total Visit: 13001

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Research article

Identifying and characterizing different stages toward Alzheimer's disease using ordered core features and machine learning

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ABSTRACT

Based on the joint ICFMMP parcellation method we developed before, which divides the cortical brain into 360 regions, the concept of ordered core features (OCF) is first proposed to reveal the functional brain connectivity relationship across different subsets of Alzheimer's disease (AD) and mild cognitive impairment (MCI).