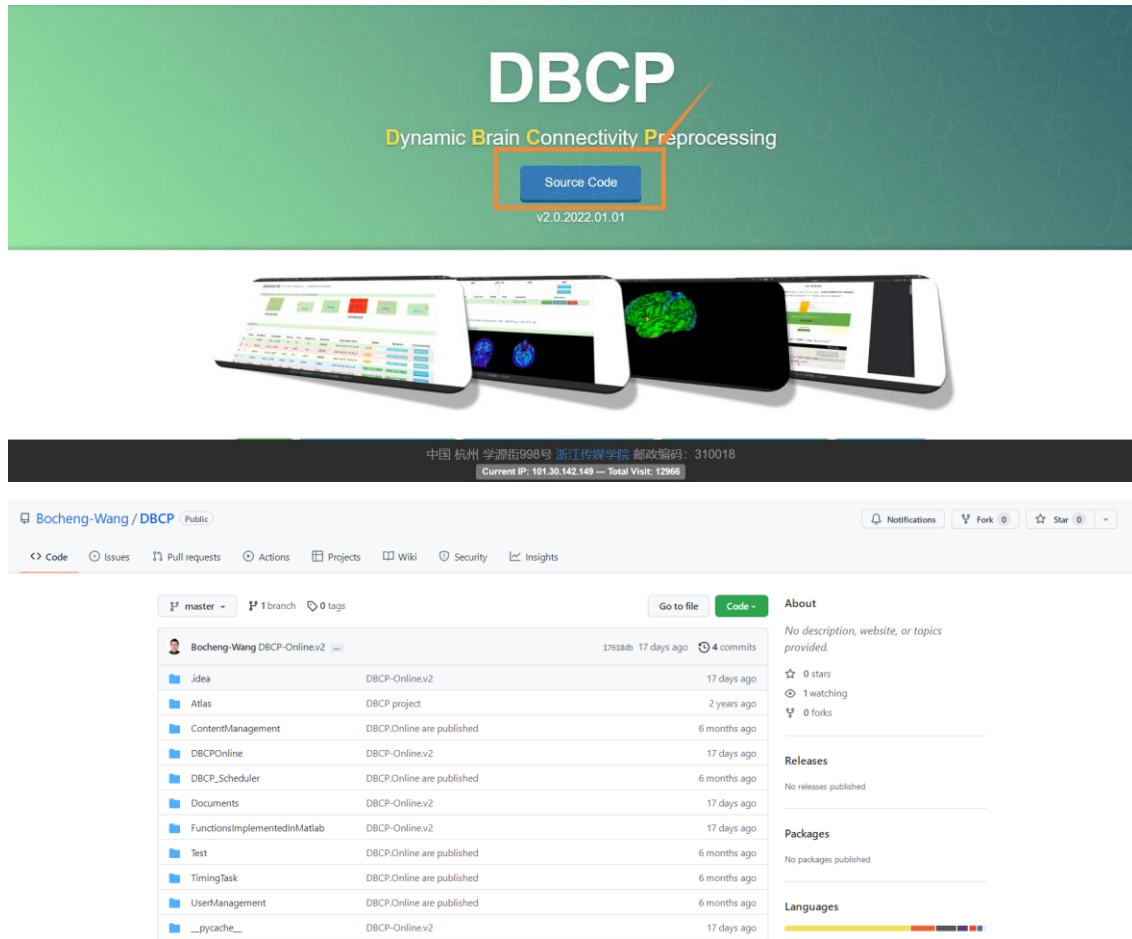


DBCP Documentation

1. In homepage of DBCP project (<http://dbcp.cuz.edu.cn/>), click the ‘Source Code’ button to view the source code on Github.com.



2. Choose Login in or Registration



3. On the registration page, enter user's name, password, confirmation password, email address, organization, usage, and verification code to complete the registration. The registration request will be automatically sent to backend website manager to confirm.

开放注册

用户名:

密码:

确认密码:

邮件地址:

单位:

用处:

验证码: 145K

4. Enter the username and password to log in to DBCP.

登录

用户名:

密码:

[忘记密码?](#)



5. DBCP-Online Data preparation page will be displayed

DBCP-Online 数据上传

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; M Sequence=GR; Slice Thickness=1.2 mm; TE=3.2 ms; TH

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=3.0 mm; TE=4.6 ms; TI=0.0 ms; TR=20.0 ms; Weighting=T2;

6. The interface is mainly divided into three parts: MRI/fMRI Upload, Data Management and Visualization. In the MRI/fMRI Upload section, click "+upload data (DICOM format compressed file, '*.zip')", and select upload compressed file in the pop-up interface. The zipped file should be renamed as 'ADNI version' with the subject ID, such as 'ADNI2_010_S_2131.zip'. Incorrect naming would not be processed in DBCP.

上传 MRI/fMRI 数据 ADNI协议数据已支持

结构磁共振数据

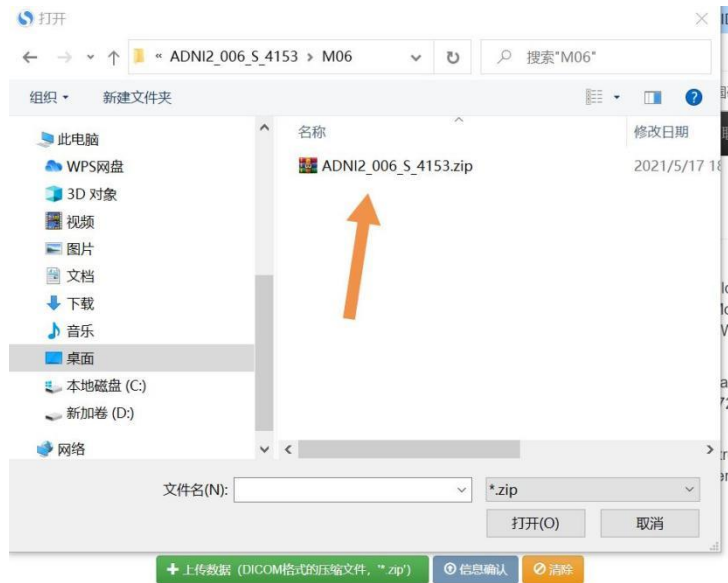
- Acquisition Plane=SAGITTAL; Acquisition Type=3D; Coil=SENSE-Head-8; Field Strength=3.0 tesla; Flip Angle=9.0 degree; Manufacturer=Philips Medical Systems; Matrix X=256.0 pixels; Matrix Y=256.0 pixels; Matrix Z=170.0 ; Mfg Model=Intera; Pixel Spacing X=1.0 mm; Pixel Spacing Y=1.0 mm; Pulse Sequence=GR; 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=1.2 mm; TE=4.6 ms; TI=0.0 ms; TR=20.0 ms; Weighting=T2;



7. For the selected compressed ADNI data, fill in the information of clinical diagnosis, visit time and age, and then click "Start Upload" to upload the data, or click "Cancel" to cancel the upload.



8. . Check that the compressed file size ranges from tens of Mb to hundreds of Mb, and the upload time is about 10-20 minutes. After the data upload is completed, you can see the relevant information of the uploaded data in the Data Management section. Click the "Modification" button or the "+" on the left side to display the visualization and deletion operations.

数据管理 李雷 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	CIFTIFY	Visualization
2	M06	EMCI	40	-	0	0	001_S_0001	CIFTIFY	Visualization
3	M03	LMCI	40	-	0	0	001_S_0001	CIFTIFY	Visualization

显示第 1 到第 1 条记录，总共 1 条记录

9. In the Visualization part, the corresponding side view, back view, and top view of the sample are displayed. The cursor stays on the corresponding sample legend to change the size of the sample. Click one sample icon to change the position of the red cross mark. You can see the change of the position of the corresponding red cross mark in the other two samples. Click the corresponding access operation to view the detailed information.

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



10. The Data Preprocessing interface is divided into two parts: Brain Connectivity and Preprocessing Queue.

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

数据预处理

HCP MMP下的脑分区，计算

大脑连接 测试用例。请点击下方“Download Connectivity”按钮下载

静态脑连接

动态脑连接

文档

To be continued

数据准备 Ready!

数据预处理 In developing

KB CA Analysis In developing New!

数据可视化 In developing

动态脑连接分析 Coming!

动态脑连接在深度学习中的研究 Coming!

Win 90

Win 95

Win 5

Win 10

共计 大脑分区 任务: 2864

已完成: 2720

正在执行: 0

等待测试: 0

失败: 72

运行服务器: 0

空闲服务器: 5

宕机服务器: 0

彭旭: 765

李雷: 265

王亚楠: 113

顾开雷: 125

江卓盛: 162

测试账号 (Test): 2

ModallD	Source	Subject	Visit	Group	Uploader	Static	Dynamic	Status	IF Failed	Connectivity	Uploade
+	1826	ADNI2	037_S_4146	M24	EMCI	Aaron08131	Failed	Finished	Failed	Reset	2021/10 13:47

中国 杭州 学院街998号 浙江传媒学院 邮政编码: 310018

Current IP: 191.30.142.149 Total Visit: 12873

11. The Brain Connection part shows static brain connectivity and dynamic brain connectivity.



12. The Preprocessing Queue part can display relevant information of uploaded data

and download progress of static and dynamic brain connection of uploaded data, and the preprocessing time is generally 4-6 hours. Click the Download button to download the brain connectivity data.

预处理队列

Q 搜索

	Index	DataBase	SubjectID	Group	Visit	Diagnosis	Uploader	Uploaded Time	Static	Dynamic	Connectivity
+	1	ADNI2	006_S_4153	AD	SC	AD	李蕾	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

< 1 2 >

13. The KBCA Analysis interface displays the current KBCA tasks, including the number of tasks that have been completed, are running, are waiting to be scheduled and failed, and the number of running servers, idle servers and down servers.

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

	ModallID	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

14. The navigation bar at the top of the page contains DBCP project, DBCP project homepage, project introduction, project team members, research status and achievements, DBCP-Online and contact us options. In the research status and achievements interface, the current research progress is displayed, including related papers and research foundations. You can jump to the corresponding articles by clicking the title.

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

中国 杭州 学源街998号 浙江传媒学院 邮政编码: 310018
Current IP: 101.30.142.149 — Total Visit: 13001

Identifying and characterizing different stages toward Alzheimer's ... 1 / 9

Heliyon 7 (2021) e07287

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon

Research article

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

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ARTICLE INFO

Keywords:
Alzheimer's disease (AD)
Mild cognitive impairment (MCI)

ABSTRACT

Based on the joint HCPMMP 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 information across different subtypes of Alzheimer's disease (AD). Two mild cognitive impairment (MCI) and