Theory Group History at IOP

Hai-Yang Cheng

Institute of Physics, Academia Sinica

November 9, 2018

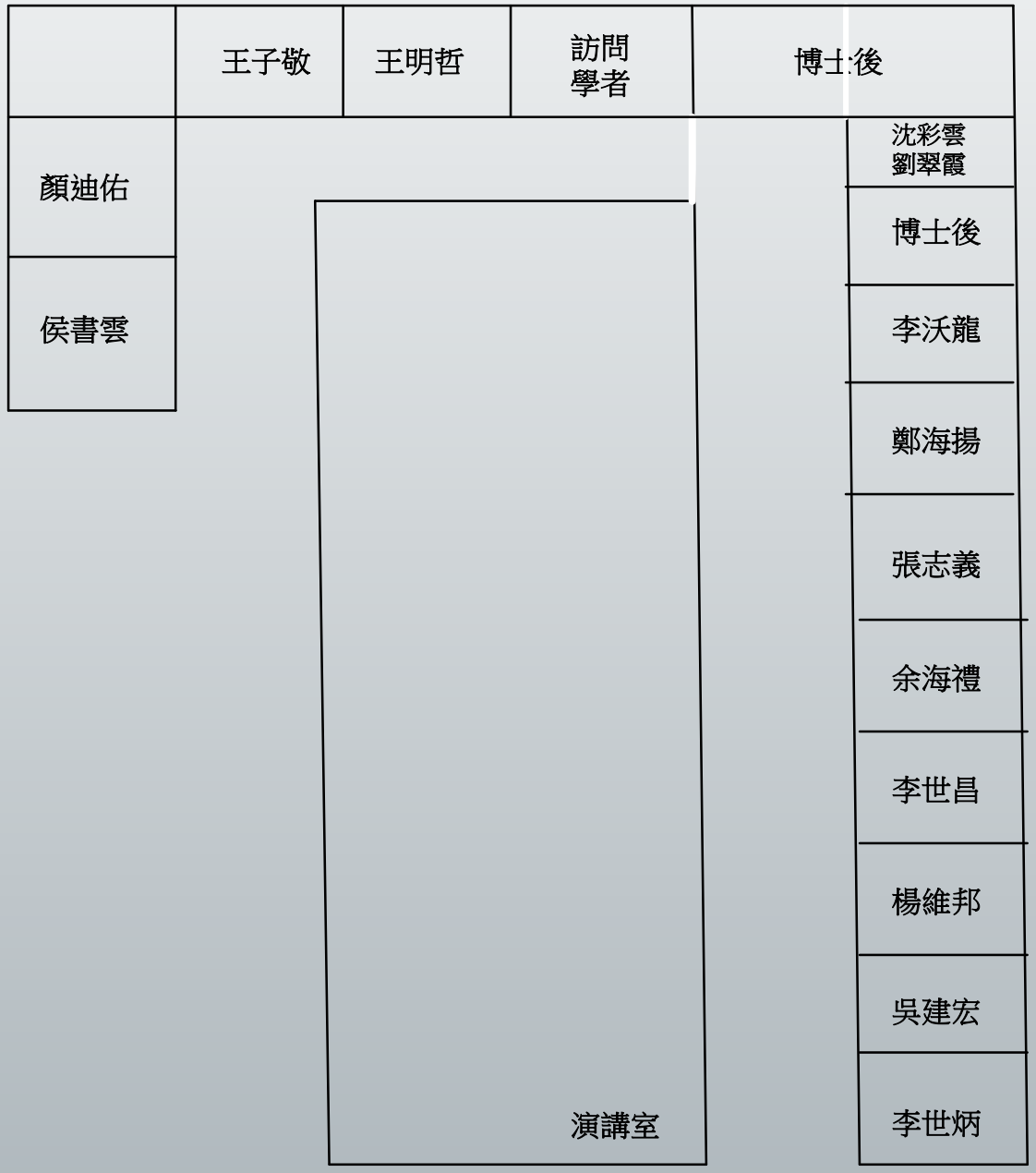
Faculties

江慶章 (1982-1986)	李世昌 (1983-)	曾詣涵 (1983-2016)	楊維邦 (1986-2003)	余海禮 (1987-2018)
張志義 (1987-2016)	蕭先雄 (東吳大學) (1987-1992)	鄭海揚 (1987-)	李世炳 (1987-)	吳建宏 (1992-)
顏迪佑 (吳鳳科技大學) (1993-2001)	李湘楠 (2001-)	阮自強 (2008-)	吳孟儒 (2017-)	蔡岳霖 (2017-)

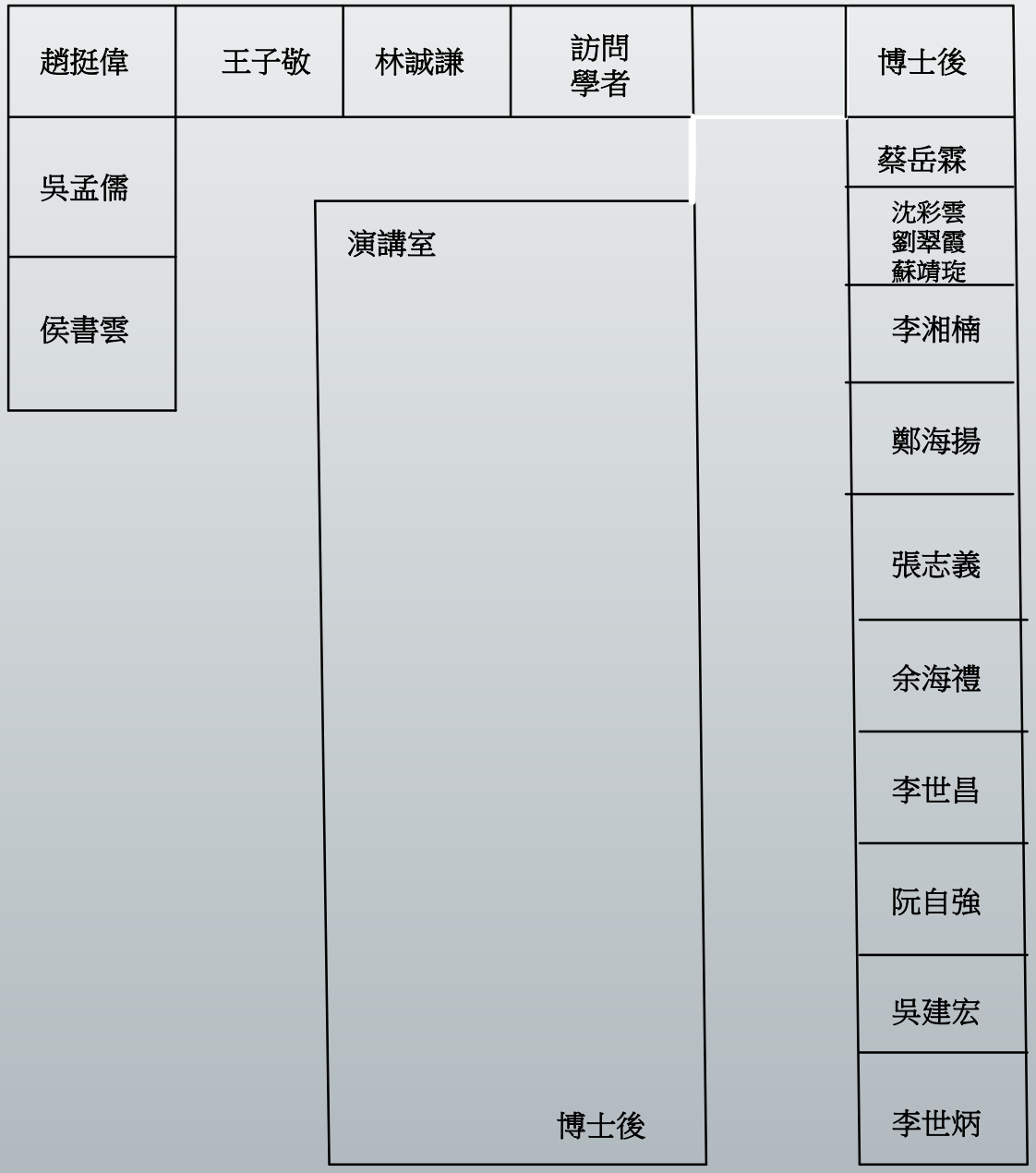
舊大樓四樓
before 1999/08

				common room	林誠謙	博士後		
				李世昌		胡進錕		
				余海禮		楊維邦		
				李世炳		電腦室		
行政室	張志義	蕭先雄	鄭海揚	檔案室				
								曾詣涵
博士後	胡宇光	李定國	演講室					
						吳建宏		
						王明哲		
						魏金明		
						吳院長		

吳大猷紀念館
(2001/3/5)


王子敬
王明哲
訪問
學者
博士後
顏迪佑
侯書雲
沈彩雲
劉翠霞
博士後
李沃龍
鄭海揚
張志義
余海禮
李世昌
楊維邦
吳建宏
李世炳
演講室

新大樓七樓
~ 2000


趙挺偉
王子敬
林誠謙
訪問
學者
博士後
吳孟儒
侯書雲
演講室
博士後
蔡岳霖
沈彩雲
劉翠霞
蘇靖琁
李湘楠
鄭海揚
張志義
余海禮
李世昌
阮自強
吳建宏
李世炳

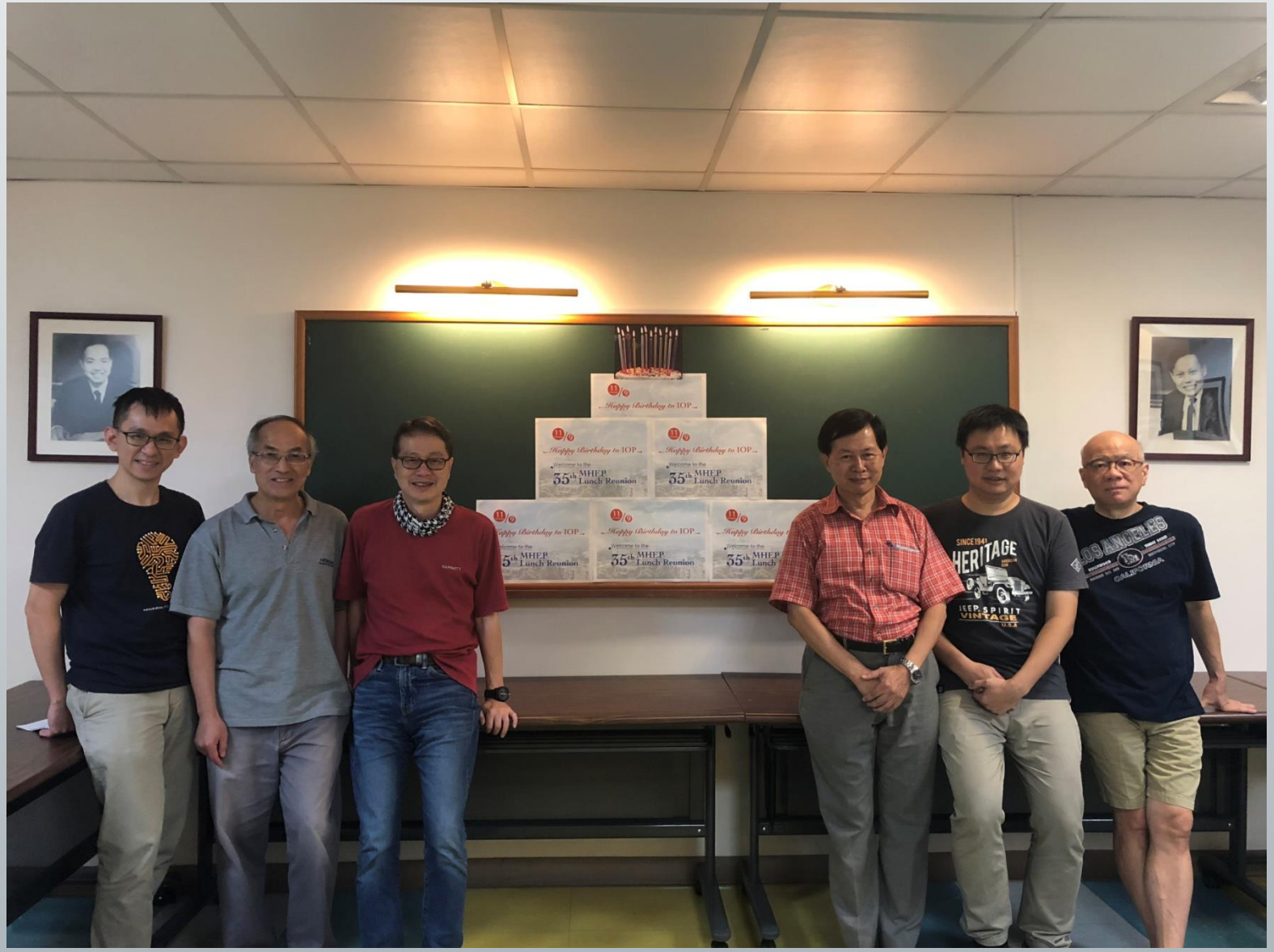
新大樓七樓
2018

Theory Group in late 80's

Theory Group now


2015
Happy New Year 2015
2015
Happy New Year 2015
2015

Happy Birthday to IOP!



培育研究人才

Pre-1999

Postdocs

李清義：文化,中原
(198?)

許瑞榮、高文芳
林達觀

施華強：師大
(1989-1991)

姚珩：師大
(1989-1991)

何俊麟：淡江
(1989-1991)

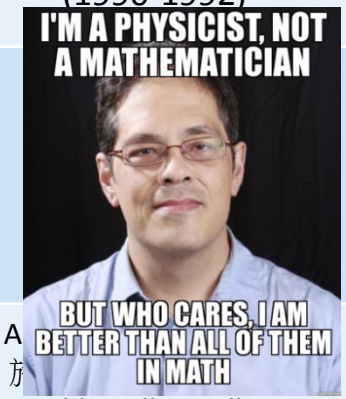
吳建宏：中研院
(1989-1992)

林偉平：師大
(1990-1992)

楊緒濃：成大
Su-Long Nyeo
(1990-1992)

曹慶堂：淡江
(1991-1992)

林貴林：交大
(1991-1994)



A
Diablo Valley College
(1991-1995)

韋忠輝
(1991-1995)

			
Baruch Rosenstein 儒森斯坦：交大 (1992-1995)	李湘楠：中正,成大, 中研院 (1992-1993)	吳家樂：亞洲大學生物資訊與醫學工程學系 (1993-1996)	高賢忠：淡江,師大 (1994-1996)
			
曾龍：崑山科大 (1994-1995, 1998-2000)	廖永安(Henry Lew)： 新加坡大學? (1994-1995)	董廣貴：香港城市大學 (1994-1995?)	劉鴻祥 (1995-1997)
			
楊桂周：中原 (1996-1999)	陳泉宏：成大 (1996-1997,2001-2003)		

assistants

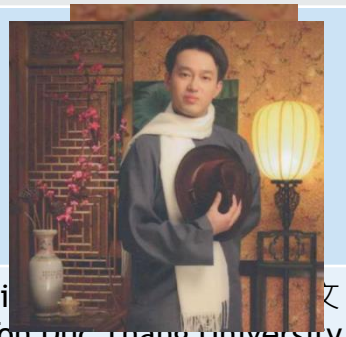
			
李大興：東華 (1988-1990, 2002)	蘇旺昌：中正 (1988-1991)	賴生南 (1988-1990)	林豐利 (1990-1992)
			
黃美玲 (1992-1994)	仲崇厚:交大	王尚勇：淡江 (1998)	張君鵬:資訊所 (2006-2014)
			
張有毅 (1993-1996)			

Post-1999

				
江祖永：中央 (1999-2001)	周志隆：中原 (1999-2001)	李沃龍：師大 (1999-2004)	林世昀：彰師大 (1999-2006)	周忠憲：成大 (2000-2007)
				
廖惠施 (2001-2005)	張有毅：東吳 (2001-2008)	魏正濤：南開 (2002-2003)	曾玠郡：帝諾科技 (2002-2010)	黃建文：高師大 (2002-2003)
				
王孫崇：中央 (2003-2004)	張維甫：清大 (2004-2006)	蔡俊謙：中原 (2003-2006)	巫俊賢：東吳 (2004-2010)	劉國欽：淡江 (2005)

				
蔡尚宇 (2005-2010)	蕭佑國：山西師大 (2007-2011)	陳佑駿 (2007-2011)	王怡青 (2006-2008)	謝榮洲 (2009-2011)
				
林家民：勤益 (2011-2012)	侯鐵君 (2011-2014)	蘇達賢 (2012-)	杜蕙慈 (2012-)	陳樫旭：淡江 (2015-2016)
				
鄭宜帆 (2016-)	Raymundo Ramos (2017-)	Manu George (2018-)		

from Japan and Korea

				
Kosuke Odagiri 小田切宏輔 (2002-2006)	Hi 文： Ton Duc Thang University (2002-2003)	Hiroaki Koyama 幸山浩章	Shunsuke Teraguchi 寺口俊介 (2006-2007)	Yoshio Kitadono 北殿義雄,蘭州近物所 (2011-2015)
				
Akira Watanabe 渡邊曉, IHEP (2014-2017)	Hiroyuki Umeeda 梅枝宏之 (2018-)	Yong Yeon Keum 琴龍淵 (1999-2002, 2004-2005)	Si-Yeon Kim 金始衍： Chung Ang (2002-2003)	Seokcheon Lee 李碩天,慶尚大學 (2005-2012)
				
Sechul Oh 吳世哲： Yonsei (2010-2011)	Yang Hwan Ahn 安良煥： IHEP (2008-2011)	Chaehyun Yu 俞彩炫 (2015-2016)		

師大: 施華強, 姚　珩, 林偉平, 高賢忠, 林豐利, 李沃龍

淡江: 何俊麟, 曹慶堂, 曾文哲, 王尚勇, 劉國欽, 陳樫旭

成大: 楊緒濃, 陳泉宏, 周忠憲

交大:　林貴林, **Rosenstein**, 仲崇厚

中原: 楊桂周, 周志隆, 蔡俊謙

中研院: 吳建宏, 李湘楠

中央: 江祖永,王孫崇

東吳: 張有毅, 巫俊賢

清大: 張維甫

東華: 李大興

中正: 蘇旺昌

彰師大: 林世昀

高師大:黃建文

崑山科大:曾龍

亞洲大學: 吳家樂

勤益科大: 林家民

組秘書

				
吳美惠 (1987-1992)	王婉美 (1991-1993)	陳品芬 (1997-1999)	沈彩雲 (1999-2004)	賴惠暄 (2004-2008)
				
張意華 (2008-2009)	林筑 (2009-2010)	洪敏玲 (2010-2012)	沈彩雲 (2012-)	

學術交流及海外訪賓

早期訪問學者

					
喬玲麗	顏東茂 (1991-1992, 1997-1998,...)	張紹進 (1994)	張為民 (1994-1995, 1997-1998)	楊炳麟 (1995-1996)	張仲澐
				...	
鄭洪	藍志成	文小剛	胡斑比		

Visitors

					
Larry Ford	高鐘	Ramesh Verma	梁宗嶽 (Terry)	鄭信佳	袁簡鵬
	…				
徐一鴻 Tony Zee					
					

早期大陸來訪學者

黃濤, 郭漢英, 張肇西, 葛墨林, 呂才典, 李建新,…

長期大陸來訪學者

			
李琳 (2007-2008)	沈月龍 (2008-2009)	高向東 (2011-2014)	張志清 (2012-2013, 2015)
			
劉新 (2014-2015)	王文飛 (2015-2016)	康現偉 (2017)	

1	1669	P712	Y	China	Prof. Fu-Sheng Yu	Henan University of Technology	Hsiang-nan Li	ASIoP	1/1- 1/28
2	1447	P710	Y	USA	Prof. Larry H. Ford	Tufts University	Kin-wang Ng	ASIoP	1/1- 1/19
3	1119	P614	N	USA	Prof. Tony Zee	University of California	Chi-Yee Cheung	ASIoP	1/1- 1/03
4	0028	P710	Y	France	Prof. Francios Bouchet	CNRS	Kin-wang Ng	ASIoP	1/19-1/26
5	0004	P712	N	China	Ms. Ou Zhang	Univ. of Arizona	Hsiang-nan Li	ASIoP	2/3-3/30
6	1280	NIL	Y	Iran	Ms. Maryam Hashemini	University of Yazd	Hsiang-nan Li	ASIoP	2/17-5/16
7	0081	P710	Y	USA	Dr. Michael G. Endres	MIT	Hsiang-nan Li	ASIoP	3/23-3/29
8	0097	P716	Y	Japan	Dr. Kenji Kadota	Nagoya University	Kin-wang Ng	ASIoP	3/24-3/26
9	0193	P716	Y	Canada	Dr. Brian Feldstein	University of Oxford	TC Yuan	ASIoP	4/5-4/12
10	0232	P712	Y	India	Dr. Sumit Kumar	Yonsei University	TC Yuan	ASIoP	4/5-4/12
11	0201	P712	Y	S. Korea	Dr. Hye-Sung Lee	College of William & Mary,Virginia	Hai-Yang Cheng	ASIoP	4/8-4/11
12	0302	P710	Y	USA	Prof. Chung Ngoc Leung	University of Delaware	Kin-wang Ng	ASIoP	4/14-7/31
					Prof. Chung Ngoc Leung	University of Delaware	Kin-wang Ng	ASIoP	Insurance
13	0082	P712	N	USA	Prof. Chung Kao	University of Oklahoma	Hai-yang Cheng	ASIoP	4/23-5/23
14	0477	P716	Y	USA	Dr. Michael G. Endres	MIT	Hsiang-nan Li	ASIoP	6/15-6/20
15	0107	P712	N	USA	Prof. Chien-Peng Yuan	Michigan State University	Hai-yang Cheng	ASIoP	6/11-6/26
16	0596	P716	Y	USA	Prof. P Q. Hung	University of Virgina	TC Yuan	ASIoP	7/7-7/15
17	0346	P712	Y	China	Prof. Sijie Gao	Beijing Normal University	Hoi-lai Yu	ASIoP	7/10-7/16
18	0616	P712	Y	China	Prof. Xin Liu	江蘇師範大學	Hsiang-nan Li	ASIoP	8/1-12/31
					Prof. Xin Liu	江蘇師範大學	Hsiang-nan Li	ASIoP	Insurance
19	0428	P614	N	USA	Prof. Tony Zee	University of California,Santa Barbara	Hai-Yang Cheng	ASIoP	8/15-9/27
20	0	P710	N	USA	Prof. Gecheng Kiang	NIL	Hsiang-nan Li	ASIoP	9/29-11/1
21	0883	P716	Y	Korea	Prof. Seongchan Park	Sungkyunkwan University	Hsiang-nan Li	ASIoP	10/5-10/7
22	1119	P710	Y	China	Prof. Xun Xue	East China Normal Univ., Shanghai	TC Yuan	ASIoP	11/1-12/31
23	1268	P716	N	France	Prof. David Kosower	CEA-Saclay,France	Hsiang-nan Li	ASIoP	11/22-11/2
24	1221	P716	N	Japan	Prof. Tsuneo Uematsu	Kyoto University	Hsiang-nan Li	ASIoP	11/20-11/2
25	1228	P716	N	Japan	Prof. Kenichi Ishikawa	Hiroshima University	Hsiang-nan Li	ASIoP	11/22-11/2
26	1282	P712	N	Taiwan	Dr. Sming Tsai	Kavli IPMU, Japan	TC Yuan	ASIoP	12/19-1/6
27	1135	P712	N	Taiwan	Mr. Heng-Yu Chen	University of Delaware	Hsiang-nan Li	ASIoP	12/15-12/1
28	1252	P712	N	Taiwan	Dr. Wei-Chih Huang	University College London	TC Yuan	ASIoP	12/10-1/6
29	1116	P716	Y	USA	Prof. Bei-Lok Hu	University of Maryland	Hsiang-nan Li	ASIoP	12/25-12/3
30	1243	P716	Y	USA	Prof. Larry H. Ford	Tufts University	Kin-wang Ng	ASIoP	12/29-1/19

(2014) 30 Visitors

12	0346 & 0251	P712	Y	India	Prof. Ramesh C. Verma	Punjabi University, Patiala,India	Hai-yang Cheng	ASIoP	3/22-4/21
13	0213	P710	Y	Japan	Prof. Koichi Yamawaki	KMI, Nagoya University	Hsiang-nan Li	ASIoP	4/13-4/18
14	0335	P712	Y	India	Prof. Rahul Sinha	Institute of Mathematical Sciences	Hai-yang Cheng	ASIoP	5/5-6/13
15	0242	P710	Y	Canada	Prof. Chi-Sing Lam	McGill University	Hai-yang Cheng	ASIoP	5/5-5/22
16	0257	P712	N	France	Prof. Tri Nang Pham	CNRS	TC Yuan	ASIoP	5/8-5/17
17	0110	P712	Y	Vietnam	Ms. Trinh Le	University of Virginia	TC Yuan	ASIoP	5/9-6/29
18	0217	P716	Y	China	Prof. Wei Wang	Shanghai Jiao-Tong University	Hsiang-nan Li	ASIoP	5/10-5/17
19	0214 & 0253	P716	Y	USA	Dr. Michael G. Endres	MIT	Hsiang-nan Li	ASIoP	5/10-5/20
20	0331	P716	Y	Korea	Dr. Yang Hwan Ahn	Korea Institute for Advanced Study	Hai-yang Cheng	ASIoP	5/10-5/16
21	0330	P716	Y	Korea	Dr. Seokcheon Lee	Korea Institute for Advanced Study	Hai-yang Cheng	ASIoP	5/11-5/20
22	0243	P710	N	USA	Prof. Chung Kao	University of Oklahoma	Hai-yang Cheng	ASIoP	5/12-6/02
23	0405	P614	N	USA	Prof. Tony Zee	University of California	TC Yuan	ASIoP	6/1-7/15
24	0524	P710	Y	HK	Prof. Chiu Man Ho	Michigan State University	Hsiang-nan Li	ASIoP	6/21-6/25
25	0385	P712	N	Taiwan	Prof. CP Yuan	Michigan State University	Hsiang-nan Li	ASIoP	6/30-7/20
26	0525	P710	Y	Canada	Prof. Chi-Sing Lam	McGill University	Hai-yang Cheng	ASIoP	7/10-7/19
27	0541	P712	N	Taiwan	Prof. Hsin-Chia Cheng	University of California, Davis	Hai-yang Cheng	ASIoP	7/14-8/17
28	0712	P715	Y	USA	Prof. Keh-Fei Liu	University of Kentucky	Hai-yang Cheng	ASIoP	7/16-7/22
29	0540	P710	N	USA	Prof. Lam Hui	Columbia University	TC Yuan	ASIoP	7/23-7/27
30	0880	P7D	N	Japan	Dr. Yoshio Kitadono	Hiroshima University	Hsiang-nan Li	ASIoP	8/9-9/7
31	0	P712	Y	Morocco	Prof. Arhrib Abdesslam	University AbdelMalek Essaadi	TC Yuan	ASIoP	9/3-9/5
32	0979	P716	N	Taiwan	Dr. Wei-Chih Huang	Technische Universität Dortmund	TC Yuan	ASIoP	9/15-9/29
33	1049	P710	Y	Irish	Prof. O'Murchadha Niall	Cork University, Ireland	Hoi-Lai Yu	ASIoP	10/21-11/02
34	0	NIL	Y	Italy	Prof. Luca Baiotti	Osaka University	Hoi-Lai Yu	ASIoP	10/25-10/29
35	0997	P712	Y	China	Prof. Zhi-Qing Zhang	河南工業大學	Hsiang-nan Li	ASIoP	11/01-01/31
	0796			China	Prof. Zhi-Qing Zhang	河南工業大學	Hsiang-nan Li	ASIoP	未自機件費用
36	0943	P7D	Y	China	Dr. Wen-Fei Wang	MOST postdoc, ASIOP	Hsiang-nan Li	ASIoP	未自機件費用
37	1198	P716	Y	HK	Prof. Kwok Yip Szeto	Hong Kong University of Science & Technology	Sp Li	ASIoP	11/13-11/18 12/5-12/10
38	1270	P716	Y	USA	Prof. Pham Quang Hung	University of Virginia	TC Yuan	ASIoP	12/08-12/14
39	1272	P710	Y	USA	Prof. Chung Ngoc Leung	University of Delaware	Chi-Yee Cheung	ASIoP	12/09-12/30
40	1318	P716	Y	Spain	Prof.Josep Batle Vallespi	University of Balearic Islands	Hsiang-nan Li	ASIoP	12/14-12/23
41	1288	NIL	N	Japan	Junichi Yokoyama	University of Tokyo	Hoi-Lai Yu	ASIoP	12/15-12/19
42	1201	P716	N	USA	Prof. Chung Kao	University of Oklahoma	Hai-yang Cheng	ASIoP	12/22-1/07
43	1298	P710	Y	USA	Prof. Larry H. Ford	Tufts University	Kin-wang Ng	ASIoP	12/31-1/30

(2015) 43 Visitors

4	1429/1516	P716	Y	Italy	Prof. Antonio Enea Romano	University of Antioquia	Kin-wang Ng	ASIoP	1/05-2/04
5	1476	P716	Y	UK	Prof. Luigi Del Debbio	University of Edinburgh	Hsiang-nan Li /David Lin	ASIoP	1/11-1/24
6	NIL	P716	Y	UK	Dr. Alberto Ramos	University of Edinburgh	David Lin	NCTU	1/13-1/19
7	0072	P712	N	Taiwan	Dr. Yang-Ting Chien	Los Alamos National Laboratory	Hsiang-nan Li	ASIoP	2/22-3/2
8	NIL	NIL	Y	Taiwan	Prof. Chopin Soo	National Cheng Kung University	Hoi-Lai Yu	ASIoP	3/02-3/11
9	0153	P712	Y	Germany	Dr. Martin Spinrath	Karlsruhe Institute of Technology	Hai-Yang Cheng	ASIoP	3
10	0193	P712	N	Taiwan	Dr. Jen-Tsung Hsiang	Fudan University	Hoi-Lai Yu	ASIoP	3
11	0156	P716	Y	HK	Dr. Ricky Chik Him Wong	University of Wuppertal	Hsiang-nan Li	ASIoP	3
12	0210	P710	Y	Taiwan	Dr. Wei-Chih Huang	Technische Universität Dortmund	TC Yuan	ASIoP	3/26-4/23
13	0183	P716	Y	Taiwan	Dr. Yue-Lin Tsai	Kavli IPMU	Kin-wang Ng	ASIoP	3/26-4/10
14	0146	P712	Y	Taiwan	Dr. Meng Ru Wu	Technische Universitat Darmstadt	Kin-wang Ng	ASIoP	3/27-3/31
15	0221	P716	Y	Denmark	Dr. Alex B. Nielsen	Max Planck Institute	Hoi-Lai Yu	ASIoP	4/12-4/14
16	NIL	NIL	Y	Taiwan	Prof. Chopin Soo	National Cheng Kung University	Hoi-Lai Yu	ASIoP	4/21-4/29
17	0326	P710	Y	USA	Prof. Wai Yee Keung	University of Illinois	TC Yuan	ASIoP	5/29-6/06
18	0377	P716	Y	India	Mr. Tanmoy Modak	Institute of Mathematical Science	TC Yuan	ASIoP	5/30-6/02
19	0361	P710	N	Taiwan	Dr. Meng Ru Wu	Technische Universitat Darmstadt	Hai-Yang Cheng	ASIoP	6/05-6/08
20	0360	P712	N	Taiwan	Prof. Chung Kao	University of Oklahoma	Hai-Yang Cheng	ASIoP	6/07-6/28
21	0367	P712	N	Taiwan	Prof. CP Yuan	Michigan State University	Hsiang-nan Li	ASIoP	6/08-7/03
22	0342	P712	N	Taiwan	Prof. Hsin-Chia Cheng	University of California, Davis	Hai-Yang Cheng	ASIoP	6/25-8/10
23	0438+0735	P710	N	China	Prof. Fanrong Xu	Jinan University, Guangzhou	Hai-Yang Cheng	ASIoP	7/10-8/31
24	0822	P712	N	Taiwan	Dr. Yue-Lin Tsai	Kavli IPMU, Univ. of Tokyo	TC Yuan	ASIoP	9/19-9/30
25	0	P710	N	USA	Prof. Gecheng Kiang	NIL	Hsiang-nan Li	ASIoP	9/19-10/24
26	0936	P716	N	UK	Prof. Niall O Murchadha	University College Cork, Ireland	Hoi-Lai Yu	ASIoP	10/3-10/17
27	0	NIL	Y	Taiwan	Prof. Da Shin Lee	National Dong Hwa University	Hsaing-nan Li	ASIoP	10/6-10/7
28	0945	P716	Y	HK	Prof. Tjonnie Guang Feng Li	Chinese University of Hong Kong	Hoi-Lai Yu	ASIoP	10/11-10/15
29	0937	P712	N	Germany	Dr. Martin Spinrath	Karlsruhe Institute of Technology	Hsiang-nan Li	ASIoP	10/8-10/28
30	1062	P716	Y	Mexico	Prof.Alfredo Aranda-Fernandez	Universidad de Colima	TC Yuan	ASIoP	12/2-12/11
31	1052	P716	Y	China	Prof. Xue Xun	East China Normal University, Shanghai	TC Yuan	ASIoP	12/5-1/4
32	1034	P712	Y	China	Prof. Cai Dian Lu	Chinese Academy of Sciences	Hsaing-nan Li	ASIoP	12/13-12/23
33	1034	P712	Y	China	Prof. Zhiyong Wang	Chinese Academy of Sciences	Hsaing-nan Li	ASIoP	12/13-12/23
34	0988	P710	Y	USA	Prof. Larry H. Ford	Turfs University	Kin-wang Ng	ASIoP	12/15-1/6

(2016) 34 Visitors

1	1052	P716	N	China	Prof. Xue Xun	East China Normal University, China	TC Yuan	ASIoP	1/1-1/4
2	0988	P710	Y	USA	Prof. Larry H. Ford	Turfs University	Kin-wang Ng	ASIoP	1/1-1/5
3	1166	P712	Y	Korea	Mr. Young-Hwan Hyun	Sungkyunkwan University, Korea	Kin-wang Ng	ASIoP	12/31-1/7
4	1146	P712	N	USA	Prof. Chung Kao	University of Oklahoma	Hsiang-nan Li	ASIoP	1/4-1/16
5	1261	P716	Y	Japan	Dr. Kyohei Mukaida	Kavli IPMU	Kin-wang Ng	ASIoP	1/5-1/7
6	1358 1254	P716	Y	Japan	Prof. Yuuiti Sendouda	Hirosaki University	Kin-wang Ng	AS	
7	1376	P716	Y	Japan	Prof. Teruaki Suyama	Research Center for the Early Universe,University of Toky	Kin-wang Ng	A	
8	1372	P716	Y	Netheland	Prof. Tjonnie Guang Feng Li	Chinese University of Hong Kong	Hoi-Lai Yu	A	
9	1151	P710	Y	Canada	Dr. Cohl Furey	University of Cambridge	Hoi-Lai Yu	ASIoP	1/16-1/20
10	NIL	P710	N	USA	Prof. Ge-Cheng Kiang	NIL	Hsiang-nan Li	ASIoP	2/1-2/15
11	NIL	P712	N	China	Prof. Fan-rong Xu	Jinan University, China	Hai-Yang Cheng	ASIoP	1/4-2/6
12	0141	P716	N	USA	Prof. Chien-Peng Yuan	Michigan State University	Hsiang-nan Li	ASIoP	3/18-4/13
13	0213	0	Y	UK	Prof. Christopher T. Sachrajda	University of Southampton	Hsiang-nan Li	ASIoP	5/20--26
14	0222	0	Y	German	Prof. Braun Vladimir	University of Regensburg	Hsiang-nan Li	ASIoP	5/14-5/15
15	0330	P710	Y	China	Prof. Zhongbo Kang	University of California, Los Angeles	Hsiang-nan Li	ASIoP	5/9-5/20
16	0202	P712	N	USA	Prof. Chung Kao	University of Oklahoma	Hai-Yang Cheng	ASIoP	5/24-6/30
17	NIL	P710	Y	USA	Prof. Bei Lok Hu	University of Maryland	Hsiang-nan Li	ASIoP	6/1-6/5
18	NIL	P710	Y	HK	Prof. Kwok Yip Szeto	Hong Kong University of Science and Technology	Sai-Ping Li	ASIoP	6/11- 6/18
19	0532	P710	Y	Korea	Prof. Jinn-Ouk Gong	Asia Pacific Center for Theoretical Physics (APCTP)	Kin-wang Ng	ASIoP	6/28-6/30
20	0510	P710	Y	Italy	Dr. Federico Urban	Laboratory of High Energy and Computational Physics	Kin-wang Ng	ASIoP	7/15-22
21	NIL	P712	N	China	Dr. Yong Chao	Massachusetts Institute of Technology	Hsiang-nan Li	ASIoP	7/9-19
22	NIL	P712	N	Japan	Prof. Issaku Kanamori	Hiroshima Universtiy	Hsiang-nan Li	ASIoP	7/12-18
23	NIL	P712	N	France	Prof. Laurent Lellouch	CNRS	Hsiang-nan Li	ASIoP	7/16-21
24	0661	P712	Y	Morocco	Prof. Arhrib Abdesslam	University Abdel Malek Essaadi	TC Yuan	ASIoP	8/1-9/7
25	NIL	P712	N	USA	Emeritus Prof. Harry C.S. Lam		Hai-Yang Cheng	ASIoP	8/7-8/17
26	NIL	P712	N	USA	Prof. Jen-Chieh PENG	University Of Illinois at Urbana-Champaign	Hai-Yang Cheng	ASIoP	8/11-8/24
27	0835	P710	N	Taiwan	Prof. Hsin-Chia Cheng	University of California, Davis	Hsiang-nan Li	ASIoP	8/19-9/20
28	NIL	313	N	Taiwan	Prof. Ge-Cheng Kiang	NIL	Hsiang-nan Li	ASIoP	10/12-11/15
29	0924	P710	Y	Russia	Prof. Irina Agafonova	Russian Academy of Sciences	Kin-wang Ng	ASIoP	10/13-29
30	0924	P710	Y	Russia	Prof. Sergei A. Levshakov	Russian Academy of Sciences	Kin-wang Ng	ASIoP	10/13-29
31	0949	P712	N	Taiwan	Dr. Yang-Ting Chien	MIT	Hsiang-nan Li	ASIoP	10/31-11/12
32	1053	P712	Y	Korea	Dr. Yang-Hwan Ahn	Institute for Basic Science, Korea	Hai-Yang Cheng	ASIoP	11/06-11/29
33	1016	P712	N	Taiwan	Dr. Wei-Chih Huang	University of Southern Denmark	TC Yuan	ASIoP	12/14-01/05
34	1126	P712	Y	USA	Prof. Larry H. Ford	Turfs University,USA	Kin-wang Ng	ASIoP	12/21-12/31

(2017) 34 Visitors

1	1016	P712	N	Taiwan	**Dr. Wei-Chih Huang**	University of Southern Denmark, Denmark	TC Yuan	ASIoP	12/14-1/5
2	1126	P712	Y	USA	**Prof. Larry H. Ford**	Turfs University,USA	Kin-wang Ng	ASIoP	12/21-1/15
3	1445	P712	N	China	**Prof. Fan-rong Xu**	Jinan University, China	Hai-Yang Cheng	ASIoP	1/21-1/29
4	0011	P712	Y	Canada	**Dr. Francis-Yan Cyr-Racine**	Harvard University, USA	Sming Tsai	ASIoP	2/6-2/23
5	NIL	P712	Y	Taiwan	**Prof. Cheng-Pang Liu**	National Dong Hwa University	Hsiang-nan Li	ASIoP	3/15-3/16
6	NIL	P712	Y	Japan	**Dr. Santanu Mondal**	National Chiao Tung University	Hs		
7	NIL	P712	Y	Taiwan	**Dr. Ke-Jung Chen**	EACOA	Ho		
8	NIL	P711	Y	Taiwan	**Dr. I-Ching Wang**	National Changhua University of Education	Ho		
9	0265	P712	Y	Japan	**Prof. Kenta Kiuchi**	Yukawa Institute for Theoretical Physics, Kyoto University	Meng-ru Wu	ASIoP	3/30-4/3
10	NIL	P712	Y	USA	**Prof. Bei-Lok Bernard Hu**	University of Maryland	Hsiang-nan Li	ASIoP	5/16-17
11	0328	P712	N	USA	**Prof. Chung Kao**	University of Oklahoma	Hai-Yang Cheng	ASIoP	5/23-6/14
12	0463	P712	N	USA	**Prof. Jen-Chieh Peng**	University of Illinois	Wen-Cheng Chang	ASIoP	6/23-7/08
13	0516	P712	Y	USA	**Prof. Eyo Eta III**	United States Naval Academy	Hoi-Lai Yu	ASIoP	07/8-7/21
14	0616	P712	Y	Japan	**Dr. Yoshio Kitadono**	Institute of Modern Physics, Chinese Academy of Sciences	Hsiang-nan Li	ASIoP	07/8-7/18
15	0615	P712	N	USA	**Prof. Yong-Zhong Qian**	University of Minnesota	Meng-ru Wu	ASIoP	7/17-7/30
16	0675	P712	N	China	**Prof. Fanrong Xu**	Jinan University, China	Hai-Yang Cheng	ASIoP	08/01-10/13
17	1008	P712	Y	China	**Prof. Qian Yuan**	Chinese Academy of Sciences	Sming Tsai	ASIoP	10/8-10/20
18	1008	P712	Y	China	**Prof. Lei Feng**	Chinese Academy of Sciences	Sming Tsai	ASIoP	10/8-10/20
19	1011	P712	Y	China	**Dr. Jin-Mian Li**	Korean Institute for Advance Study	Sming Tsai	ASIoP	10/14-10/20
20	1060	P712	Y	USA	**Prof. Kek-Fei Liu**	University of Kentucky	Hai-Yang Cheng	ASIoP	10/21-10/24
21	0978	P712	Y	USA	**Prof. Tung-Mow Yan**	Cornell University	Kin-wang Ng	ASIoP	11/7-12/2
22	0984	P712	N	Japan	**Prof. Toshifumi Futamase**	Kyoto Sangyo University	Kin-wang Ng	ASIoP	11/15-11/21
23	1057	P712	Y	Japan	**Mr. Shunichi Horigome**	University of Tokyo	Sming Tsai	ASIoP	11/18-12/1
24	1057	P712	Y	Japan	**Mr. Taisuke Katayose**	University of Tokyo	Sming Tsai	ASIoP	11/18-12/1
25	0630	P712	Y	Japan	**Dr. Akira Watanabe**	Institute of High Energy Physics, Chinese Academy of Sciences	Hsiang-nan Li	ASIoP	11/25-11/27
26	0623	P712	N	Taiwan	**Dr. Wei-Chih Huang**	University of Southern Denmark, Denmark	TC Yuan	ASIoP	12/2-12/28
27	1187	P712	Y	USA	**Prof. Igoc Shovkovy**	Arizona State University	Hsiang-nan Li	ASIoP	12/10-12/15
28	1186	P712	Y	Taiwan	**Prof. Di Lun Yang**	Yukawa Institute for Theoretical Physics, Kyoto University	Hsiang-nan Li	ASIoP	12/10-12/14

(2018) 28 Visitors

Tung-Mow Yan

Heavy quark symmetry and chiral dynamics (1992)

Tung-Mow Yan, Cheng, Chi-Yee Cheung, Guey-Lin Lin, Yeu-Chung Lin and Hoi-Lai Yu =$(CLY)^2$

COVER SHEET -- FACSIMILE TRANSMISSION

CALLING FAX NUMBER: 9011-886-2-789-9636

TO: 張煌輝 博士
Institute of Physics, Academia Sinica

FROM: Tung-Mow Yan
Newman Laboratory of Nuclear Studies
Cornell University
Ithaca, NY 14853-5001 USA

Telephone: 607-255-7185 Facsimile: 607-254-4552

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[redacted]

''' Comments on the momentum parametrization.

Objective: The intermediate particle is sufficiently off shell. So we would like to reduce the two step process into an effective local interaction which is gauge invariant.

Requirements

1. Both light quark and heavy quark are close to mass shell.
2. Invariant mass $(p_B + p_Q)^2 = (m_Q + m_B)^2 \pm \Lambda_{QCD}^2$ and it should be independent of outside kinematics. Otherwise, it is not a bound state.

Implications

1. For the light quark, $m_q \sim \Lambda_{QCD}$, and the off-shell mass is also of order Λ_{QCD}. So it is either exactly on the mass shell or it is off-shell a lot. So we choose to have it exactly on shell:

$$p_B = m_B v. \qquad v^2 = 1.$$

$$(e) = -\frac{g^2}{64\pi^2}\ln\frac{|k|^2}{\mu^2} K_{ik}\,4\{-2(\tilde{F}^{\mu\nu}+iF^{\mu\nu})\bar{u}_c\tfrac{1}{2}\lambda_a\gamma_\mu(1-\gamma_5)u_b\times \bar{u}_{c'}\tfrac{1}{2}\lambda_a\gamma_\nu(1-\gamma_5)v_{u'} + 2(\tilde{F}^{\mu\nu}+iF^{\mu\nu})\bar{u}_{c'}\tfrac{1}{2}\lambda_a\gamma_\mu(1-\gamma_5)u_b\cdot\bar{v}_{d'}\tfrac{1}{2}\lambda_a\gamma_\nu(1-\gamma_5)v_{u'}\}$$

$$\boxed{(e)=0}$$

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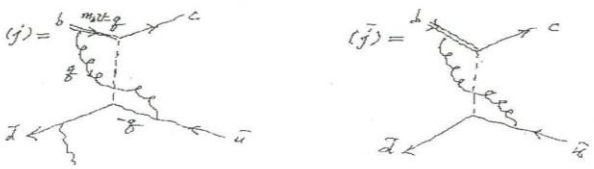
We almost forgot to include diagram (j) on p. 36.



We can first compute the correction factor to 4-point vertex first

$$(\bar{j}) = \int\frac{d^4q}{(2\pi)^4}\,\bar{u}_c\gamma^\mu(1-\gamma_5)\frac{i}{m_b v\!\!\!/ - q\!\!\!/ - m_b}(-ig\tfrac{\lambda_a}{2}\gamma^\nu)u_b \times \bar{v}_{\bar{d}}\gamma_\nu(1-\gamma_5)\frac{-i}{q\!\!\!/}\cdot(-ig\tfrac{\lambda_a}{2}\cdot\gamma_\mu)v_{\bar{u}}\frac{-i}{q^2}$$

$$= +ig^2\int\frac{d^4q}{(2\pi)^4}\frac{g^\lambda}{(q^2)^2 v\cdot q}\,\bar{u}_c\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}u_b\,\bar{v}_{\bar{u}}\gamma_\lambda(1-\gamma_5)\gamma_\lambda v\!\!\!/\tfrac{\lambda_a}{2}v_{\bar{u}}$$

$$= -\frac{g^2}{16\pi^2}\ln\frac{|k|^2}{\mu^2}\,\bar{u}_c\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}u_b\,\bar{v}_{\bar{u}}\gamma_\mu(1-\gamma_5)\tfrac{\lambda_a}{2}v_{\bar{u}}$$

$$\therefore\ \boxed{(j) = -\frac{g^2}{16\pi^2}\ln\frac{|k|^2}{\mu^2}K_{ik}(\tilde{F}_{\mu\nu}+iF_{\mu\nu})\{\bar{u}_c\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}u_b\}[\bar{v}_{\bar{d}}\gamma^\nu(1-\gamma_5)\tfrac{\lambda_a}{2}v_{\bar{u}}]}$$

We note that $(i)+(\bar{j})=0$, $(e)=0$, $(g)+(h)+(i)=0$

So

$$(a)+(b)+\cdots+(j) = (a)+(b)+(c)+(f)$$

$$= \frac{3g^2}{64\pi^2}\cdot\frac{N_c^2-1}{N_c}\ln\frac{|k|^2}{\mu^2}K_{ik}(\tilde{F}_{\mu\nu}+iF_{\mu\nu})\bar{u}_c\gamma^\mu(1-\gamma_5)u_b\cdot\bar{v}_{\bar{d}}\gamma^\nu(1-\gamma_5)v_{\bar{u}} + \frac{g^2}{16\pi^2}\ln\frac{|k|^2}{\mu^2}K_{ik}(\tilde{F}_{\mu\nu}+iF_{\mu\nu})\bar{u}_c\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}u_b\cdot\bar{v}_{\bar{d}}\gamma^\nu(1-\gamma_5)\tfrac{\lambda_a}{2}v_{\bar{u}}$$

Let's define

$$O_{1,\mu\nu} = \bar{c}\gamma^\mu(1-\gamma_5)b\cdot\bar{d}\gamma^\nu(1-\gamma_5)u,$$
$$O_{2,\mu\nu} = \bar{c}\gamma^\mu(1-\gamma_5)u\cdot\bar{d}\gamma^\nu(1-\gamma_5)b$$

Then

$$(\tilde{F}_{\mu\nu}+iF_{\mu\nu})O_1^{\mu\nu} \xrightarrow[1\text{-loop}]{QCD} (\tilde{F}_{\mu\nu}+iF_{\mu\nu})O_1'^{\mu\nu}$$

$$(\tilde{F}_{\mu\nu}+iF_{\mu\nu})O_1'^{\mu\nu} = (\tilde{F}_{\mu\nu}+iF_{\mu\nu})\{[1+\frac{3g^2}{16\pi^2}\cdot\frac{N_c^2-1}{N_c}\ln\frac{|k|^2}{\mu^2}]O_1^{\mu\nu} + \frac{g^2}{16\pi^2}\ln\frac{|k|^2}{\mu^2}\bar{c}\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}b\cdot\bar{d}\gamma^\nu(1-\gamma_5)\tfrac{\lambda_a}{2}u\}$$

$$\bar{c}\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}b\cdot\bar{d}\gamma^\nu(1-\gamma_5)\tfrac{\lambda_a}{2}u$$
$$= \bar{c}^\alpha\gamma^\mu(1-\gamma_5)b^\beta\cdot\bar{d}^\alpha\gamma^\nu(1-\gamma_5)u^{\beta'}\cdot\frac{1}{2}[\delta_{\alpha\beta}\delta_{\alpha'\beta'}-\frac{1}{N_c}\delta_{\alpha\beta}\delta_{\alpha'\beta'}]$$
$$= \frac{1}{2}\bar{c}^\alpha\gamma^\mu(1-\gamma_5)b^\beta\cdot\bar{d}^\beta\gamma^\nu(1-\gamma_5)u^\alpha - \frac{1}{2N_c}O_1^{\mu\nu}$$

$$\boxed{\bar{c}\gamma^\mu(1-\gamma_5)\tfrac{\lambda_a}{2}b\cdot\bar{d}\gamma^\nu(1-\gamma_5)\tfrac{\lambda_a}{2}u = \frac{1}{2}\bar{c}^\alpha\gamma^\mu(1-\gamma_5)b^\beta\cdot\bar{d}^\beta\gamma^\nu(1-\gamma_5)u^\alpha - \frac{1}{2N_c}O_1^{\mu\nu}}$$

$$\therefore\ \boxed{(\tilde{F}_{\mu\nu}+iF_{\mu\nu})O_1'^{\mu\nu} = (\tilde{F}_{\mu\nu}+iF_{\mu\nu})\{[1+\frac{g^2}{4\pi^2}(\frac{3(N_c^2-1)}{N_c}\oplus\frac{2}{N_c})\ln\frac{|k|^2}{\mu^2}]O_1^{\mu\nu} + \frac{g^2}{32\pi^2}\ln\frac{|k|^2}{\mu^2}\bar{c}^i\gamma^\mu(1-\gamma_5)b^i\cdot\bar{d}^j\gamma^\nu(1-\gamma_5)u^j\}}$$

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...tion operators $1-\gamma_5$ simplify things somewhat.

...t set $\bar{3}\to\bar{3}$ first.

$$\cdot)\,/\,O_{1,\mu\nu}\,/\,\Xi_b^0(v)\rangle$$

$$)\gamma_\nu(1-\gamma_5)u_b(v)[A\,v\!\!\!/_v + B\,v\!\!\!/_v]$$

$$= \tfrac{1}{2}\gamma_\mu\{\gamma^\alpha,\gamma_\beta\} = \tfrac{1}{2}[\gamma_\mu\gamma_\alpha\gamma_\beta + \gamma_\mu\gamma_\beta\gamma_\alpha]$$
$$= \tfrac{1}{2}\{g_{\mu\alpha}\gamma_\beta + \tfrac{1}{2}[\gamma_\mu,\gamma_\alpha]\gamma_\beta\} + \tfrac{1}{2}\gamma_\mu\gamma_\beta\gamma_\alpha$$
$$= -\tfrac{i}{2}\sigma_{\mu\alpha}\gamma_\beta + \tfrac{1}{2}g_{\mu\alpha}\gamma_\beta + \tfrac{1}{2}\gamma_\mu\gamma_\alpha\gamma_\beta$$
$$= -\gamma_\beta\gamma_\mu\gamma_\alpha + 2g_{\mu\alpha}\gamma_\beta$$
$$\gamma_\alpha\gamma_\mu = -\tfrac{1}{2}\gamma_\beta\gamma_\mu\gamma_\alpha + g_{\mu\alpha}\gamma_\beta$$
$$= -\tfrac{1}{2}\gamma_\beta\{g_{\mu\alpha} + \tfrac{1}{2}[\gamma_\mu,\gamma_\alpha]\} + g_{\mu\alpha}\gamma_\beta$$
$$= -\tfrac{1}{2}\gamma_\beta g_{\mu\alpha} + \tfrac{1}{2}i\gamma_\beta\sigma_{\mu\alpha} + g_{\mu\alpha}\gamma_\beta$$

$$\therefore\ \boxed{\gamma_\mu v\!\!\!/_v - v\!\!\!/_v\gamma_\mu = -\tfrac{i}{2}\sigma_{\mu\alpha}\gamma_\alpha + \tfrac{i}{2}\gamma_\alpha\sigma_{\mu\alpha}}$$

Now $(\gamma_\mu v\!\!\!/_v - v\!\!\!/_v\gamma_\mu)(1-\gamma_5) = -\frac{i}{2}\sigma_{\mu\alpha}(1+\gamma_5)\gamma_\alpha + \frac{i}{2}\gamma_\alpha\sigma_{\mu\alpha}(1-\gamma_5)$

$$= -\tfrac{i}{2}\sigma_{\mu\alpha}(1+\gamma_5) + \tfrac{i}{2}\gamma_\alpha\sigma_{\mu\alpha}(1-\gamma_5)$$

$$m_{\Xi_b}v = m_{\Xi_c}v' + k \qquad \text{in } \Xi_b\to\Xi_c+\gamma(k)$$

$$\therefore\ \boxed{\gamma_\alpha = \frac{m_{\Xi_c}}{m_{\Xi_b}}\gamma_\alpha' + \frac{k_\alpha}{m_{\Xi_b}}}$$

$$\therefore\ \gamma_\alpha\sigma_{\mu\alpha}(1-\gamma_5) = \frac{m_{\Xi_c}}{m_{\Xi_b}}\gamma_\alpha'\sigma_{\mu\alpha}(1-\gamma_5) + \frac{1}{m_{\Xi_b}}k_\alpha\sigma_{\mu\alpha}(1-\gamma_5).$$

$$\langle B_b(v')\,/\,O_{2,\mu\nu}\,/\,B_{\bar{3}}(v)\rangle$$
$$= \langle 0\,/\,\bar{B}_b(v')\phi_v^\lambda\,\overbrace{c_{v'}\bar{c}_{v'}}\,\gamma_\mu(1-\gamma_5)u\,\bar{d}\gamma_\nu(1-\gamma_5)\overbrace{b_v\phi_v^\dagger}\,u_{\bar{3}}(v)\,/\,0\rangle$$
$$= \bar{B}_\lambda(v')\tfrac{1+v\!\!\!/'}{2}\gamma_\mu(1-\gamma_5)\langle 0\,/\,\phi_{v'}^\lambda\,u\,\bar{d}\,\phi_v^\dagger\,/\,0\rangle\gamma_\nu(1-\gamma_5)\tfrac{1+v\!\!\!/}{2}u_{\bar{3}}(v)$$

$$\boxed{\langle 0\,/\,\underset{1^+}{\phi_{v'}^\lambda}\,u\,\bar{d}\,\underset{0^+}{\phi_v^\dagger}\,/\,0\rangle = v'^\lambda\gamma_5(G_1+G_2v\!\!\!/+G_3v\!\!\!/'+G_4v\!\!\!/'v\!\!\!/) + \gamma^\lambda\gamma_5(H_1+H_2v\!\!\!/+H_3v\!\!\!/'+H_4v\!\!\!/'v\!\!\!/)}$$

$$\therefore\ \boxed{\langle B_b(v)\,/\,O_{2,\mu\nu}\,/\,B_{\bar{3}}(v)\rangle = \bar{B}_\lambda(v')\gamma_\mu(1-\gamma_5)[v'^\lambda\gamma_5(G_1+G_2v\!\!\!/+G_3v\!\!\!/'+G_4v\!\!\!/'v\!\!\!/) + \gamma^\lambda\gamma_5(H_1+H_2v\!\!\!/+H_3v\!\!\!/'+H_4v\!\!\!/'v\!\!\!/)]\gamma_\nu(1-\gamma_5)u_{\bar{3}}(v)}$$


ROOTS

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黃偉彥,侯維恕,詹傳宗,高涌泉,…

Distinguished lecturers

Tohru Eguchi (Tokyo)
Kazuo Fujikawa (Tokyo)
Hidezumi Terazawa (INS)
Koichi Yamawaki (Nagoya)
Masataka Fukugita
…

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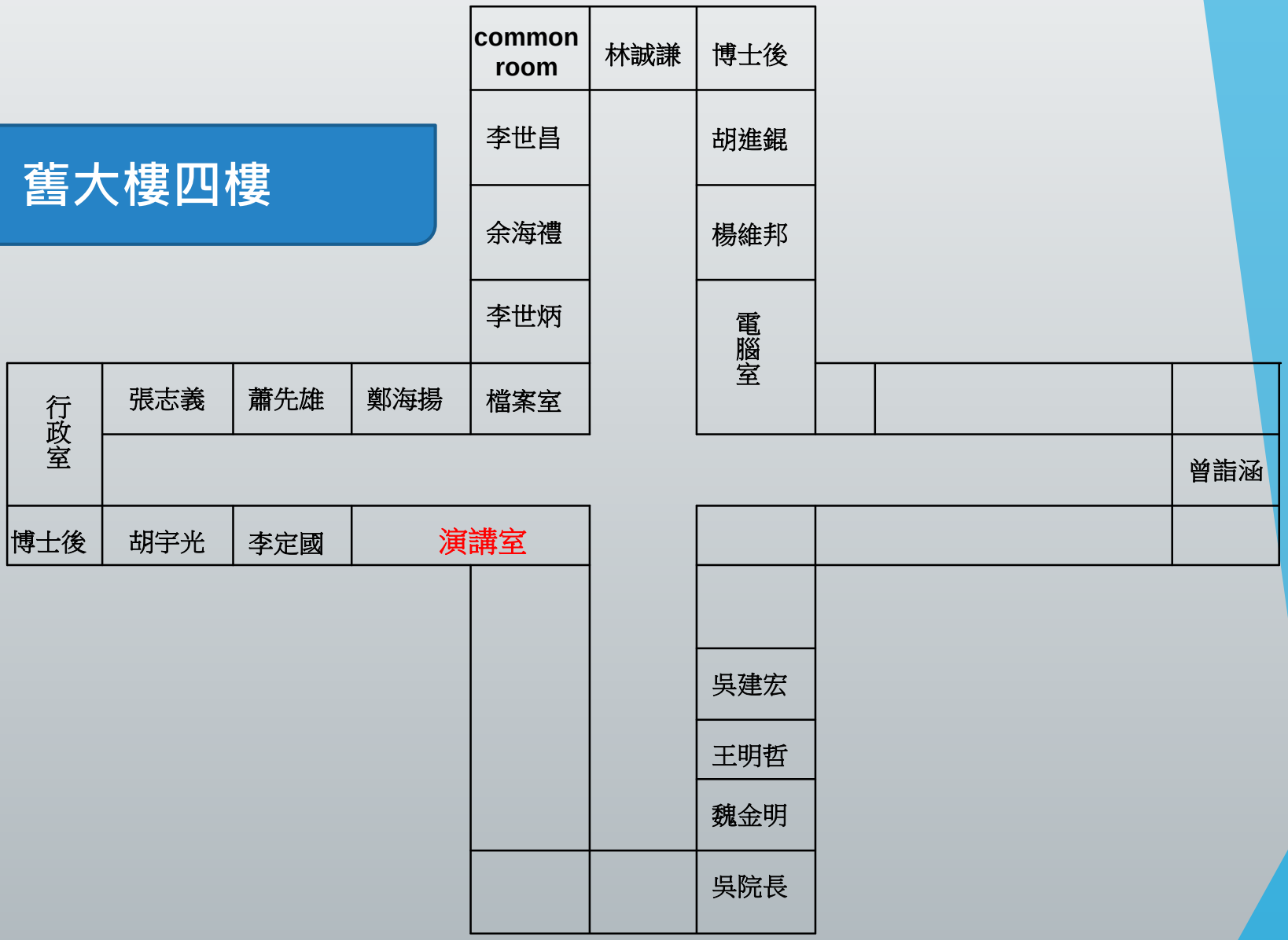
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Particle Physics Phenomenology (PPP) Worskhop

1.	May 22-24, 1992	Kenting (AS)	T. Mannel, J.W. Qiu
2.	May 19-21, 1994	Kenting (AS)	M. Neubert, S. Pakvasa, W. Busza, L.F. Li
3.	Nov. 14-17, 1996	Jinshan (NTHU)	B. Grinstein. E. Braaten; L.N. Chang, E. Ma, John Ng, T. Inagaki, K. F. Liu, Y. Kuno, X.G. He, D. S. Hwang, P. Depommier
4.	Jun. 18-21, 1998	Kaohsiung (NCTU,AS)	C. Sachrajda, J. Soffer, A. Soni, S. Stone, H. Yamamoto, R. Fleischer, E.J. Chun, M. Bisset, Y.Q. Chen, S. Donati, D.S. Hwang, S.K. Kang. T. Morozumi, Y. Okada, P. Ko, B. H. Lee
5.	Nov. 8-11, 2000	Chi-Pen (NCKU)	M. Neubert, S. Pakvasa, S. Brodsky, D. Pirjol, J. Chay, M. Burkhardt, P. Vogel, J. Huston,…
	Jul. 5-10, 2004		2004 Eastern Formosa Summer School on Particles & Fields, NDHU, Hualien D. Chang, P.M. Ho, W.S. Hou, W.Y. Keung, T.K. Kuo, J.W. Qiu
6.	Jun. 5-9, 2005	Lo-Tung (NTHU)	Meissner, L. Dixon, S. Fleming, D. Adams, Babu, S. Mathur, P. Ko, X.D. Ji, J.P. Ma,…
7.	Jun. 7-10, 2007	Taipei (NTU)	A. Suzuki, C. S. Kim, Z. J. Xiao, S. Scopel, S. Olsen, J. Gunion, S. Matsumoto, J. Song, P. Poulose, P. Drechsel, G. Kribs
8.	May 20-23, 2009	Tainan (NCKU)	M.C. Chen, L.F. Li, K.B. Luk; T.N. Pham, C.S. Kim, Y. Yamamoto, J. Park, T. Kikuchi, H.S. Cheon, T. Asaka, S. Kanemura
9.	Jun. 3-6, 2011	Chung-li (NCU)	T. Han, D. Marfatia, G. Roland; N. Kawamoto, T. Kamon, R. Kitano, W.Y. Keung, C. Kao, E. Lanene, S. Fleming, S.F. Su, N. Gaur, K. Hagiwara
10.	Jun. 18-21, 2013	Chung-li (CYCU)	P. Ko, D. Soper, J. Zupan; C.S. Kim, C. Kao, Y. Koike, M. Wakamatsu, M. Tanimoto, S.C. Park
11.	May 12-15, 2015	Tamsui (AS)	M. Endres, M. Sasaki, W.Y. Keung; A. Soni, J.C. Peng, M. Wakamatsu, J.W. Qiu, T.N. Pham, W. Wang, C.S. Lam, E. Ma, R. Shrock, R. Sinha, S. Matsumoto, S. Mishima, Y.Y. Keum

May 22-24, 1992

The First Workshop on Particle Physics Phenomenology

May 19-21, 1994

The Second Workshop on Particle Physics Phenomenology

May 14, 2015

The Eleventh Workshop on Particle Physics Phenomenology

May 23-27, 1988

中能及高能原子核物理國際會議
International Conference on Medium & High-Energy Nuclear Physics

Second OCPA Conference (August 11-15, 1997)

1988

The 12th Spring School on Particles and Fields

April 19-20, 1991

第二屆中韓中能物理研討會
The 2nd ROC-ROK Symposium on Medium-Energy Physics

April 8-10, 2013

Workshop on Higgs Physics and Beyond

Feb. 17-21, 2014

2014 Asia-Pacific School and Workshop on Gravitation and Cosmology

Oct. 5-8, 2015

10th Circum-Pan-Pacific Symposium on High-Energy Spin Physics

Oct. 28-30, 2015

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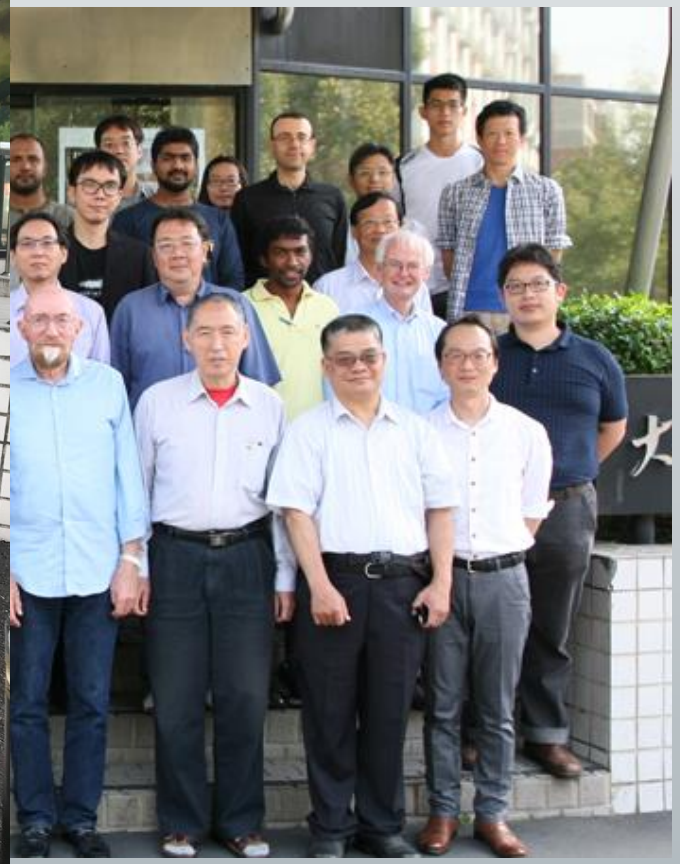
到黑洞及星際效應
Holes and Interstellar

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