

# The CHEP'15 Parallel Program

CHEP'15 Program Committee

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21st International Conference on Computing in High Energy and Nuclear Physics **CHEP2015** Okinawa Japan: April 13 - 17, 2015

# Overview of the CHEP'15 PC work



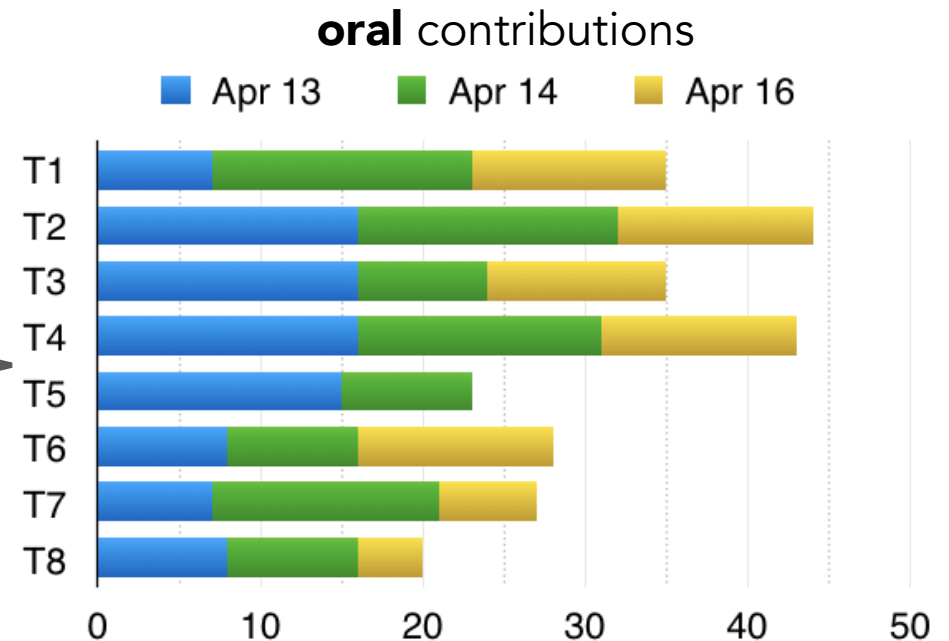
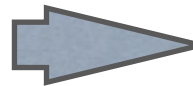
A total of **535 contributions** (after few merges)

Opted for a scheme in the parallel program that allowed a large number of oral slots (264 slots), the rest to go as posters

- ◆ “keywords process” **NEW**
- ◆ 15-min slots minutes talks **NEW**

Few withdrawals, so totals are:

- ◆ a total of **255 oral contributions**
- ◆ a total of **248 poster contributions**
- ◆ **424** individuals listed as “presenters”



Proceedings:

- ◆ max 8 pages for orals, max 8 pages for posters **NEW**
- ◆ due on **May 17th**
- ◆ one month after end of the conference, and \***no extension will be granted**\* **NEW**

# Keywords



Bottom-up approach to define tracks a-posteriori

- ◆ multiple topical “keywords” selectable at the abstract submission time

<b>Application keywords</b>
<b>A01 DAQ</b>
<b>A02 Trigger</b>
<b>A03 Simulation</b>
<b>A04 Reconstruction</b>
<b>A05 Data analysis</b>
<b>A06 Data stores</b>
<b>A07 Experiment frameworks for WAN distributed computing</b>
<b>A08 Middleware and services for production-quality infrastructures</b>
<b>A09 Outreach</b>
<b>A10 Multi-discipline / multi-experiment topic</b>
<b>A11 Computing models</b>
<b>A12 Data Preservation</b>
<b>A13 Monitoring</b>

## Technologies Keywords

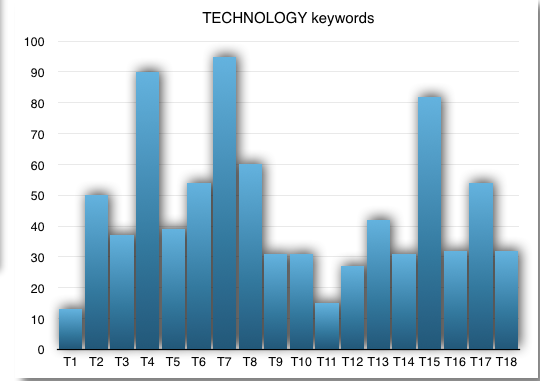
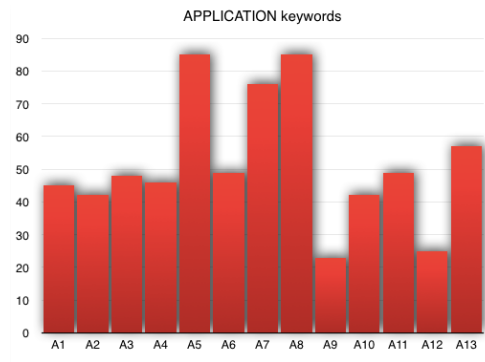
<b>T01 Control systems</b>
<b>T02 Event processing frameworks</b>
<b>T03 Data structures and algorithms</b>
<b>T04 Data handling/access</b>
<b>T05 Databases</b>
<b>T06 Storage systems</b>
<b>T07 Computing facilities and infrastructures</b>
<b>T08 Software design</b>
<b>T09 Software development process</b>
<b>T10 Performance and validation tools</b>
<b>T11 Continuous integration systems</b>
<b>T12 Parallel programming</b>
<b>T13 Networking</b>
<b>T14 Collaborative tools</b>
<b>T15 Cloud computing</b>
<b>T16 Virtualisation</b>
<b>T17 High performance computing</b>
<b>T18 CPU architectures, GPU, FPGA</b>

(.. for all >530 abstracts ..)

No.	Abstract	Topic	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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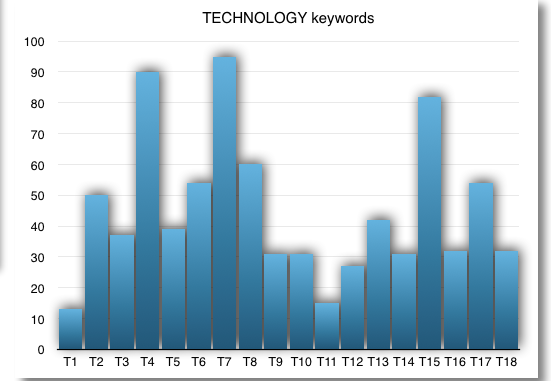
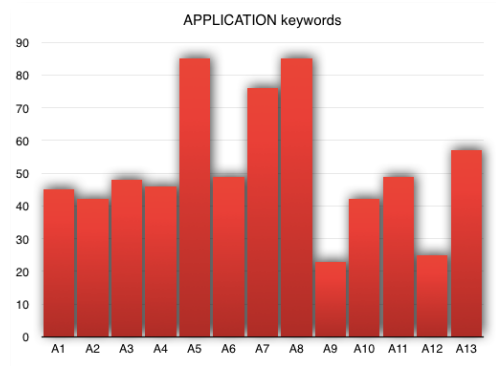
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PC chairs and keyword conveners

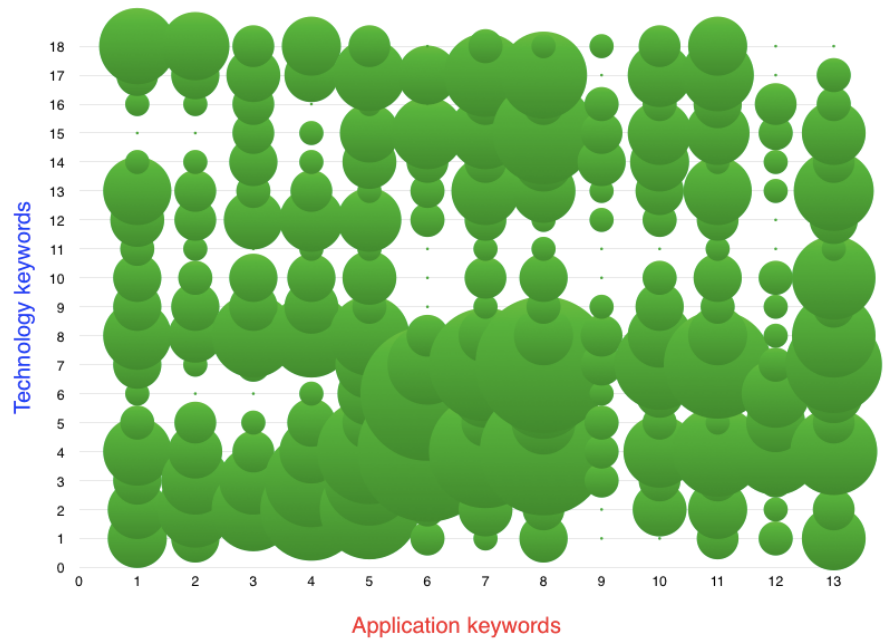
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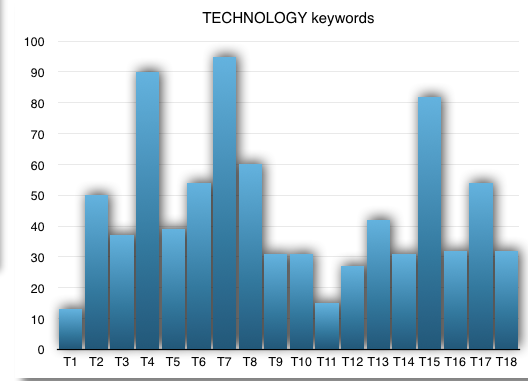
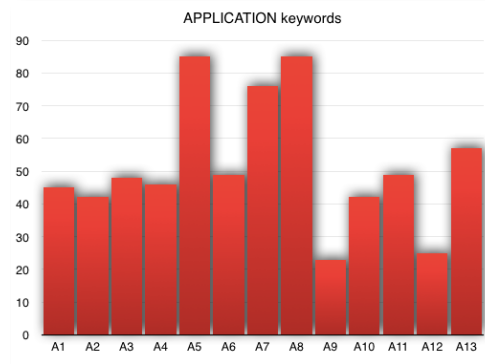
PC chairs and **keyword** conveners

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(.. for all >530 abstracts ..)

No.	Title	Abstract	Chair	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13
1	...	...	...													
2	...	...	...													



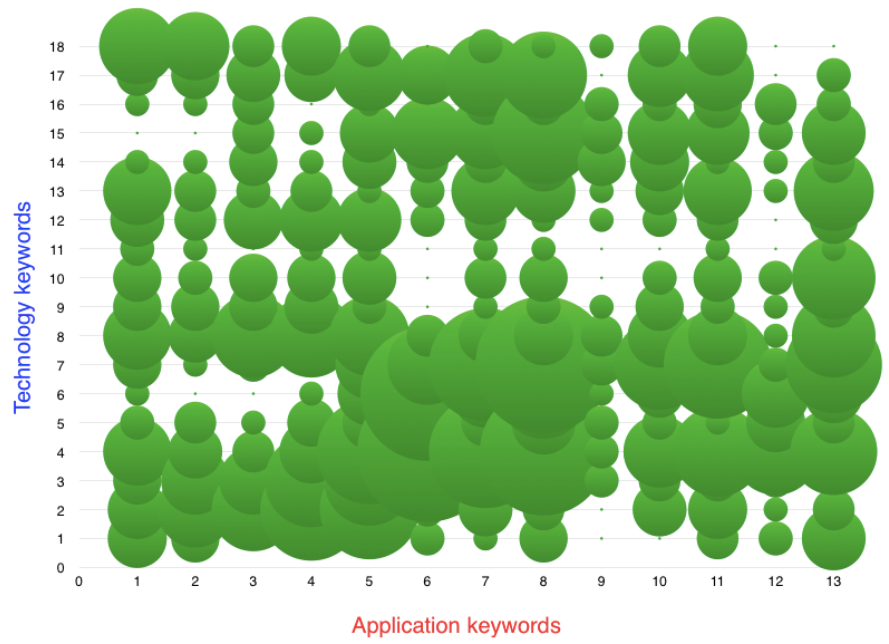
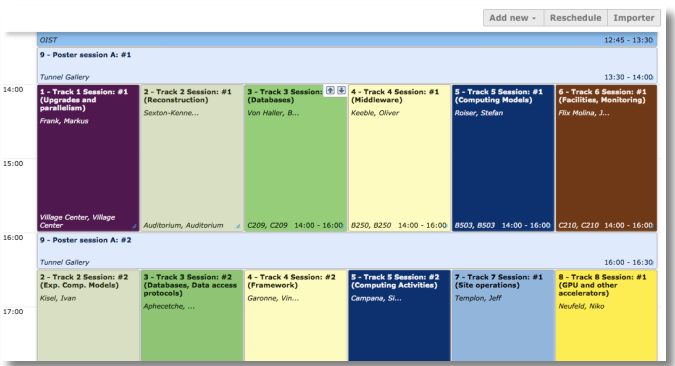
PC chairs and **keyword** conveners

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PC chairs and **keyword** conveners

Actual CHEP'15 track definition

PC chairs and **track** coordinators



It took us ~1 month more, but it may be partially automated

# CHEP'15 tracks



## **Track 1 - Online computing**

DAQ and Trigger; development, design, architecture for filtering, reconstruction, etc. and use within experiments and facilities; evaluation and testing of such systems; parallelism, HPC, and accelerator use in such systems; event building and farm networks; compute farms for high-level triggering; configuration and run controls; describing and managing configuration data and conditions databases; online software frameworks and tools; online calibration procedures; remote access to (and control of) DAQ systems and experimental facilities.

## **Track 2 - Offline software**

event generation, simulation and reconstruction; detector geometries, algorithms for physics analysis; tools and techniques for data classification and parameter fitting; event visualisation and data presentation; frameworks for event processing; toolkits for simulation, reconstruction and analysis; event data models.

## **Track 3 - Data store and access**

Storage management; local I/O and data access; mass storage systems; object dictionaries; event stores; metadata and supporting infrastructure; databases; access patterns and caching strategies.

## **Track 4 - Middleware, software development and tools, experiment frameworks, tools for distributed computing**

Grid middleware; software reliability, interoperability and security; experiment specific middleware applications; software testing and quality assurance; programming techniques and tools; software build, release, distribution tools and documentation; configuration management; Grid monitoring tools; mobile computing.

## **Track 5 - Computing activities and Computing models**

Distributed computing aspects with focus on operations; distributed data processing experience, including experience with grids and clouds; workflows and data management in operations; distributed data analysis; experience with production and data challenges; experience with analysis using distributed resources; interactive analysis using distributed resources; monitoring of user jobs and data; global usage and management of resources; data preservation; data curation and long-term data reproducibility.

## **Track 6 - Facilities, Infrastructure, Network**

Hardware and benchmarks; fabric virtualisation; fabric management and administration; local (LAN) and wide-area networking (WAN); private networks; collaborative systems: progress in technologies and applications; tele-presence and teleconferencing systems; experience in the use of teleconferencing tools.

## **Track 7 - Clouds and Virtualisation**

Cloud, virtual machine, container, volunteer computing technologies; frameworks and tools to exploit these technologies and environments; experiences in managing and using these technologies in production environments.

## **Track 8 - Performance increase and optimisation exploiting hardware features**

CPU/GPU architectures; tightly-coupled systems; GPGPU; hardware and benchmarking; concurrency; vectorisation and parallelisation; mathematical libraries; foundation and utility libraries; documentation.



# Thanks to all PC members!



**Track-1:** Ryosuke Itoh, Andrea Bocci, Jim Patrick

**Track-2:** Jim Kowalkowski, Hisaya Kurashige, Ivan Kisel, Andrew Norman, Liz Sexton-Kennedy

**Track-3:** Latchezar Betev, Christopher Pinkenburg, Alastair Dewhurst, Giacomo Govi

**Track-4:** Takanori Hara, Tony Wildish, Vincent Garonne, Marco Clemencic, Brett Viren, Cristina Aiftimiei

**Track-5:** Tadashi Maeno, Simone Campana, Mike Hildreth, Silvia Amerio, Stefan Roiser

**Track-6:** Phil Demar, Peter Hristov, Pepe Flix, Eric Yen, Helge Meinhard

**Track-7:** Andrew McNab, Federico Stagni, Claudio Grandi, Jeff Templon

**Track-8:** Amitoj Singh, Niko Neufeld, Tommaso Boccali, Danilo Piparo

We gratefully **thank** also who helped in the keywords phase only

- ◆ Gancho Dimitrov, Nicolò Magini, Chris Jones

## **SPECIAL THANKS:**

- ◆ to **Sakamoto-san** for his constant help and support
- ◆ to the marvellous work by **Ueda-san**, the **LOC team**, and all the **scientific secretaries** on-site!

Stay tuned: more work will come with the proceedings..

# Track summaries agenda



## Track 1 - Online computing

DAQ and Trigger; development, design, architecture for filtering, reconstruction, etc. and use within experiments and facilities; evaluation and testing of such systems; parallelism, HPC, and accelerator use in such systems; event building; compute farms for high-level triggering; configuration and run controls; describing and managing configuration data; online software frameworks and tools; online calibration procedures; remote access to (and control of) DAQ systems and experimental facilities.

Tomorrow

## Track 2 - Offline software

event generation, simulation and reconstruction; detector geometries, algorithms for physics analysis; frameworks for data classification and parameter fitting; event visualisation and data presentation; frameworks for event simulation, reconstruction and analysis; event data models.

Tomorrow

## Track 3 - Data store and access

Storage management; local I/O and data access; mass storage systems; object dictionaries; event data supporting infrastructure; databases; access patterns and caching strategies.

Tomorrow

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Grid middleware; software reliability, interoperability and security; experiment specific middleware; testing and quality assurance; programming techniques and tools; software build, release, distribution tools and configuration management; Grid monitoring tools; mobile computing.

Tomorrow

## Track 5 - Computing activities and Computing models

Distributed computing aspects with focus on operations; distributed data processing experience, including experience with grids and clouds; workflows and data management in operations; distributed data analysis; experience with production data challenges; experience with analysis using distributed resources; interactive analysis using distributed resources; managing user jobs and data; global usage and management of resources; data preservation; data curation and long-term data reproducibility.

Today

## Track 6 - Facilities, Infrastructure, Network

Hardware and benchmarks; fabric virtualisation; fabric management and administration; local (LAN) and wide area (WAN); private networks; collaborative systems: progress in technologies and applications; tele-presence systems; experience in the use of teleconferencing tools.

Tomorrow

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Today

## Track 8 - Performance increase and optimisation exploiting hardware features

CPU/GPU architectures; tightly-coupled systems; GPGPU; hardware and benchmarking; concurrency; vectorisation and parallelisation; mathematical libraries; foundation and utility libraries; documentation.

Today