Swiss Institute of Particle Physics

CHIPP financial tables

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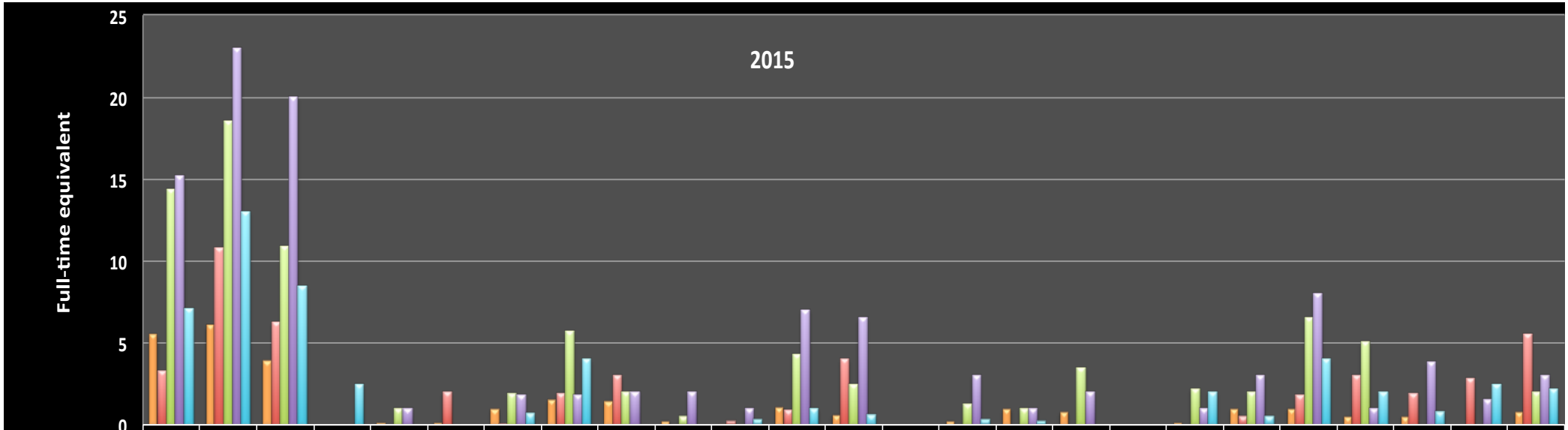
26 projects included in the CHIPP tables

- 2015 data collection campaign:
  - more difficult than expected
  - still some inconsistencies
    - corrections welcome

Experiment name	Responsible	Category	Updated
M&O LHC experiments	Olivier Schneider	High Energy	08.06.2015
ATLAS	Giuseppe Iacobucci	High Energy	18.06.2015
CMS	Rainer Wallny	High Energy	17.06.2015
LHCb	Olivier Schneider	High Energy	08.06.2015
LHC Computing Tier-2	Christoph Grab	High Energy	29.04.2015
HL-LHC + FCC	Lenny Rivkin	High Energy	10.06.2015
CLIC	Lenny Rivkin	High Energy	12.06.2015
MAGIC + FACT	Adrian Biland	Astroparticle	18.06.2015
CTA	Teresa Montaruli	Astroparticle	16.06.2015
AMS	Martin Pohl	Astroparticle	15.06.2015
IceCube	Teresa Montaruli	Astroparticle	09.06.2015
DAMIC	Ben Kilminster	Astroparticle	18.06.2015
XENON	Laura Baudis	Astroparticle	12.06.2015
DARWIN	Laura Baudis	Astroparticle	12.06.2015
ArDM	André Rubbia	Astroparticle	11.05.2015
GERDA	Laura Baudis	Neutrino	12.06.2015
EXO	Razvan Gornea	Neutrino	07.05.2014
SHiP	Nicola Serra	Neutrino	19.06.2015
OPERA	Antonio Ereditato	Neutrino	12.06.2015
MICE + MIND	Alain Blondel	Neutrino	17.06.2015
SBN	Antonio Ereditato	Neutrino	09.06.2015
NA61/T2K/HyperK	Alain Blondel	Neutrino	17.06.2015
WA105 + DUNE-SPT	André Rubbia	Neutrino	19.06.2015
Mu3e	Christoph Grab	Low Energy	16.06.2015
MEG II	Stefan Ritt	Low Energy	11.06.2015
nEDM	Klaus Kirch	Low Energy	11.06.2015

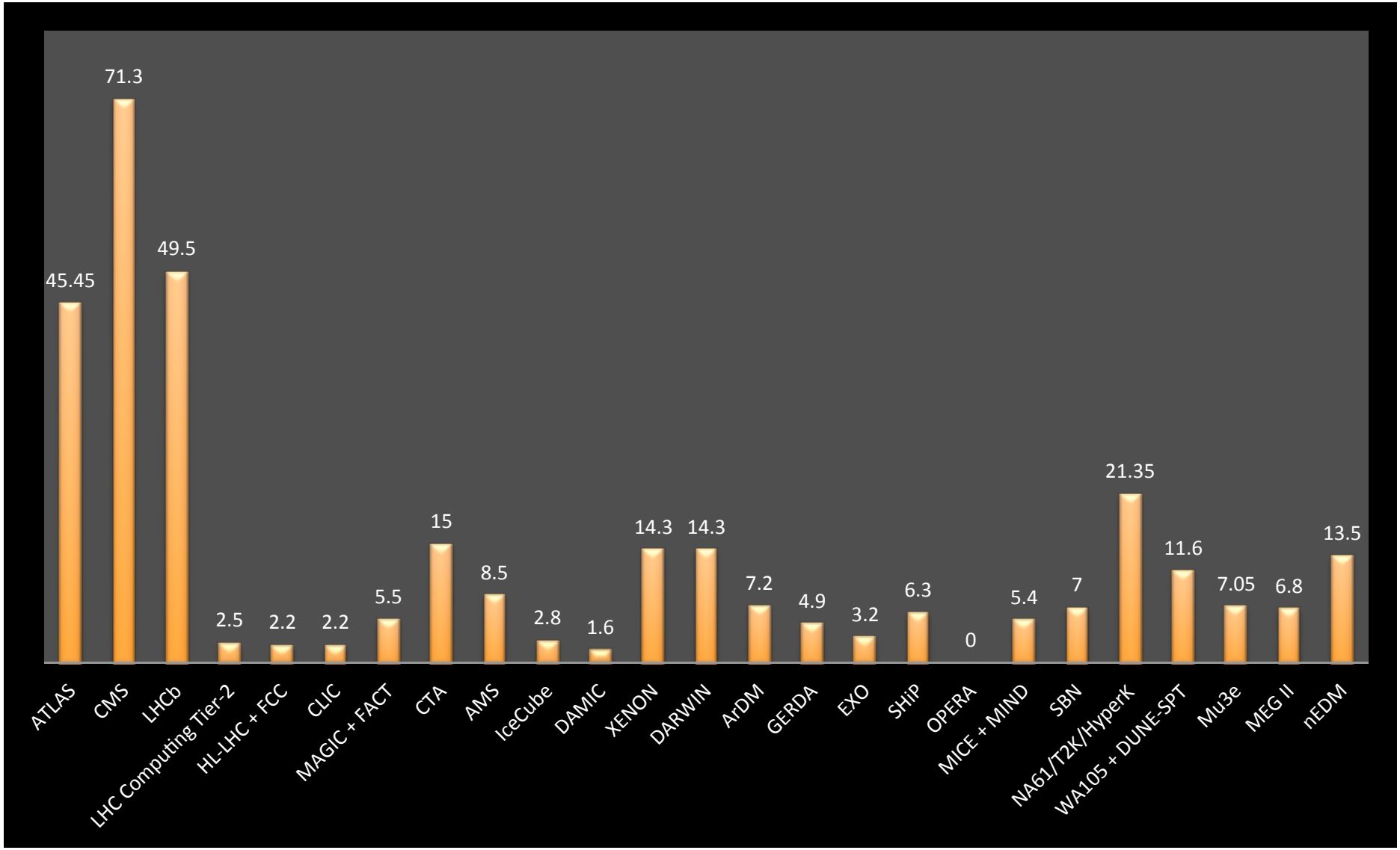
FTEs declared for 2015



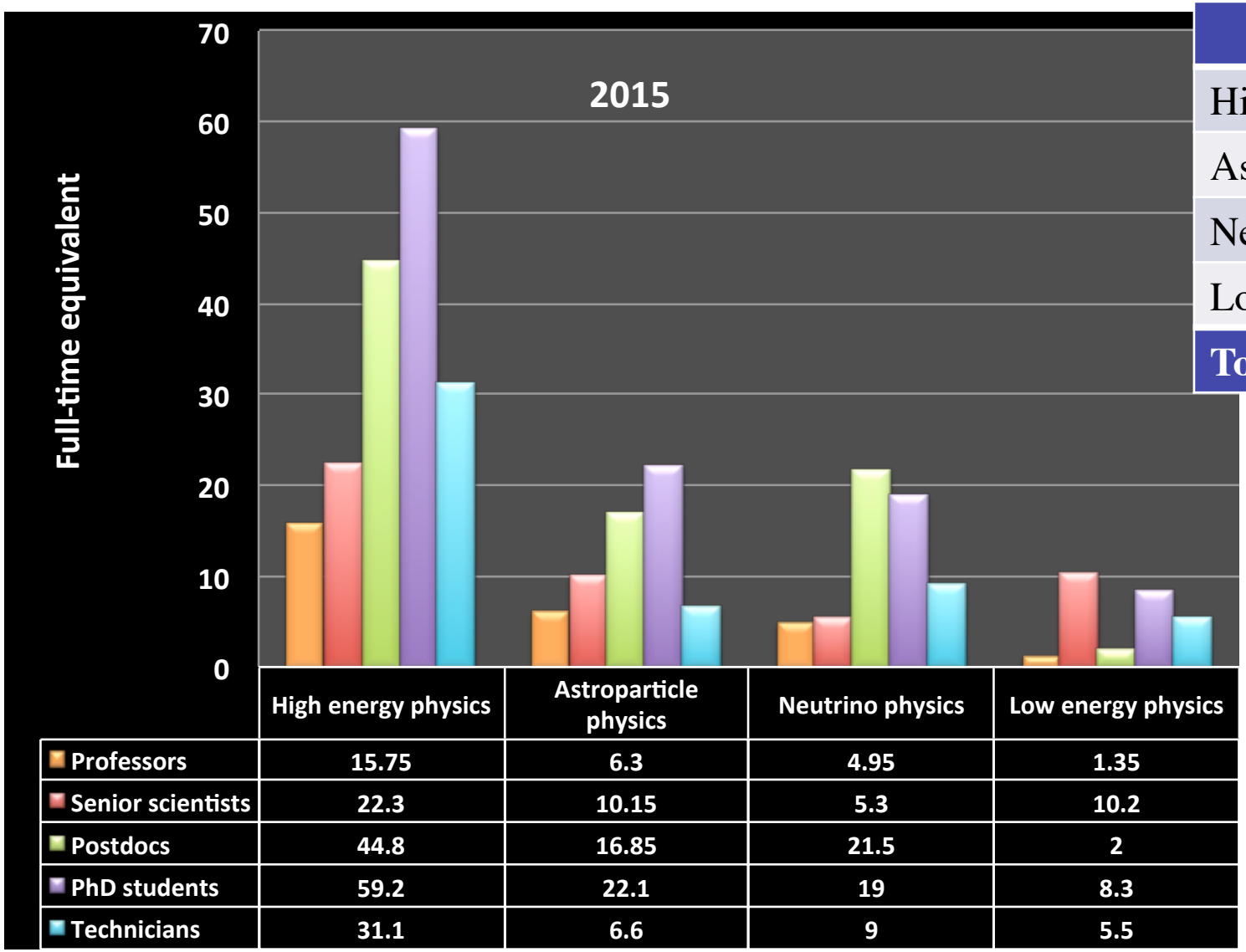
	ATLAS	CMS	LHCb	LHC Computing Tier-2	HL-LHC + FCC	CLIC	MAGIC + FACT	CTA	AMS	IceCube	DAMIC	XENON	DARWIN	ArDM	GERDA	EXO	SHiP	OPERA	MICE + MIND	SBN	NA61/ T2K/ HyperK	WA105 + DUNE-SPT	Mu3e	MEG II	nEDM
Professors	5.45	6	3.9	0	0.2	0.2	1	1.6	1.5	0.3	0.1	1.1	0.7	0	0.3	1	0.8	0	0.2	1	1.05	0.6	0.55	0	0.8
Senior scientists	3.3	10.8	6.2	0	0	2	0.1	1.95	3	0	0.2	0.9	4	0	0	0	0	0	0	0.5	1.8	3	1.9	2.8	5.5
Postdocs	14.4	18.5	10.9	0	1	0	1.9	5.65	2	0.5	0	4.3	2.5	0	1.3	1	3.5	0	2.2	2	6.5	5	0	0	2
PhD students	15.2	23	20	0	1	0	1.8	1.8	2	2	1	7	6.5	0	3	1	2	0	1	3	8	1	3.8	1.5	3
Technicians	7.1	13	8.5	2.5	0	0	0.7	4	0	0	0.3	1	0.6	0	0.3	0.2	0	0	2	0.5	4	2	0.8	2.5	2.2

- Reminder:
  - FTEs are expected to be normalized to research time without overlap between projects

FTEs declared for 2015



FTEs declared for 2015



	FTEs	
High Energy	173.15	53%
Astroparticle	69.20	21%
Neutrino	59.75	18%
Low energy	27.35	8%
Total	**329.45**	**100%**

FLARE requests

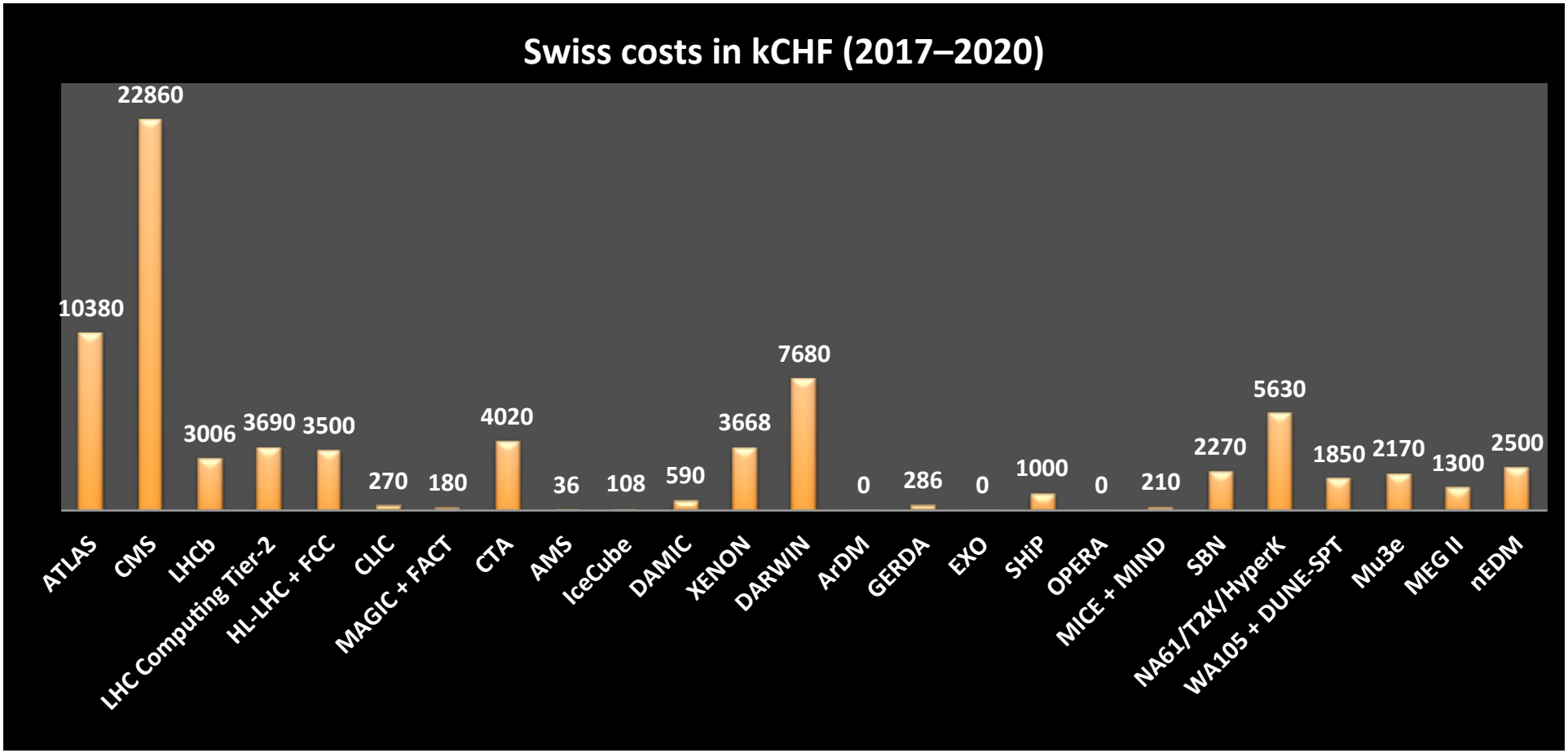
Prio	Pillar	Project	Item	2013	2014	2015	2016	2017	2018	2019	2020	2013 – 2016	2017 – 2020
2	High energy	ATLAS	Request	970	940	1'166	1'096	2'570	2'570	2'570	2'570	4'172	10'280
2	High energy	CMS	Request	1'458	1'455	1'455	1'466	1'370	1'370	1'370	1'370	5'833	5'480
2	High energy	LHCb	Request	738	702	707	700	700	700	700	300	2'847	2'400
1	High energy	M&O LHC experiments	Request	990	975	973	972	966	970	970	970	3'911	3'876
1	High energy	LHC Computing Tier-2	Request	820	840	840	840	960	1'020	1'020	1'020	3'340	4'020
–	High energy	HL-LHC + FCC	Request	0	0	0	0	500	1'500	1'000	500	0	3'500
3	High energy	CLIC	Request	120	120	120	120	120	120	0	0	480	240
2	Astroparticle	CTA	Request	0	1'000	1'050	1'000	1'000	1'000	1'000	1'000	3'050	4'000
–	Astroparticle	DAMIC	Request	0	0	0	100	100	100	100	100	100	400
2	Astroparticle	XENON	Request	0	0	887	800	650	650	650	650	1'687	2'600
2	Astroparticle	DARWIN	Request	0	0	0	28	990	990	990	990	28	3'960
–	Astroparticle	ArDM	Request	0	0	0	100	50	0	0	0	100	50
–	Neutrino	GERDA	Request	0	0	0	50	57	57	57	57	50	228
–	Neutrino	SHiP	Request	0	0	0	0	220	220	520	520	0	1'480
–	Neutrino	OPERA	Request	175	175	0	0	0	0	0	0	350	0
3	Neutrino	SBN	Request	200	265	865	860	930	590	290	90	2'190	1'900
3	Neutrino	NA61/T2K/HyperK	Request	250	264	450	450	550	600	600	600	1'414	2'350
2	Neutrino	WA105 + DUNE-SPT	Request	681	681	730	450	650	700	200	50	2'542	1'600
–	Low energy	Mu3e	Request	0	0	0	0	0	0	250	250	0	500
1	ALL	ALL	Request	1'810	1'815	1'813	1'812	1'926	1'990	1'990	1'990	7'251	7'896
2	ALL	ALL	Request	3'847	4'778	5'994	5'539	7'930	7'980	7'480	6'930	20'158	30'320
3	ALL	ALL	Request	570	649	1'435	1'430	1'600	1'310	890	690	4'084	4'490
–	ALL	ALL	Request	175	175	0	250	927	1'877	1'927	1'427	600	6'158
ALL	High energy	ALL	Request	5'096	5'032	5'261	5'194	7'186	8'250	7'630	6'730	20'582	29'796
ALL	Astroparticle	ALL	Request	0	1'000	1'937	2'028	2'790	2'740	2'740	2'740	4'964	11'010
ALL	Neutrino	ALL	Request	1'306	1'385	2'045	1'810	2'407	2'167	1'667	1'317	6'546	7'558
ALL	**ALL**	**ALL**	**Request**	**6'402**	**7'417**	**9'243**	**9'031**	**12'383**	**13'157**	**12'287**	**11'037**	**32'092**	**48'864**

FLARE funding mismatch

All money numbers in kCHF	Current FLARE scheme				New FLARE scheme				Current	New
	2013	2014	2015	2016	2017	2018	2019	2020	2013 – 2016	2017 – 2020
Available funding	5'700	6'041	7'200	7'600					26'541	
CHIPP grants (according to CHIPP tables)	4'788	5'235	6'412	795					17'230	
Non-CHIPP grants (according to P3 database)	847	785	445	360					2'436	
Fraction of funding to non-CHIPP projects	15.0%	13.0%	6.5%	31.1%					12.4%	
Unknown or not assigned yet from current FLARE	**65**	**21**	**344**	**6'445**					**6'875**	
Assumption for available funding in new FLARE					**9'600**	**9'600**	**9'600**	**9'600**		**38'400**
Fracton of funding assumed to go to non-CHIPP projects				20.0%	20.0%	22.5%	22.5%	25.0%	20.0%	22.5%
Anticipated CHIPP requests				**7'075**	**12'383**	**13'157**	**12'287**	**11'037**	**7'075**	**48'864**
Under-funding of CHIPP projects				**1'919**	**4'703**	**5'717**	**4'847**	**3'837**	**1'575**	**19'104**
				27.1%	38.0%	43.5%	39.4%	34.8%	22.3%	39.1%

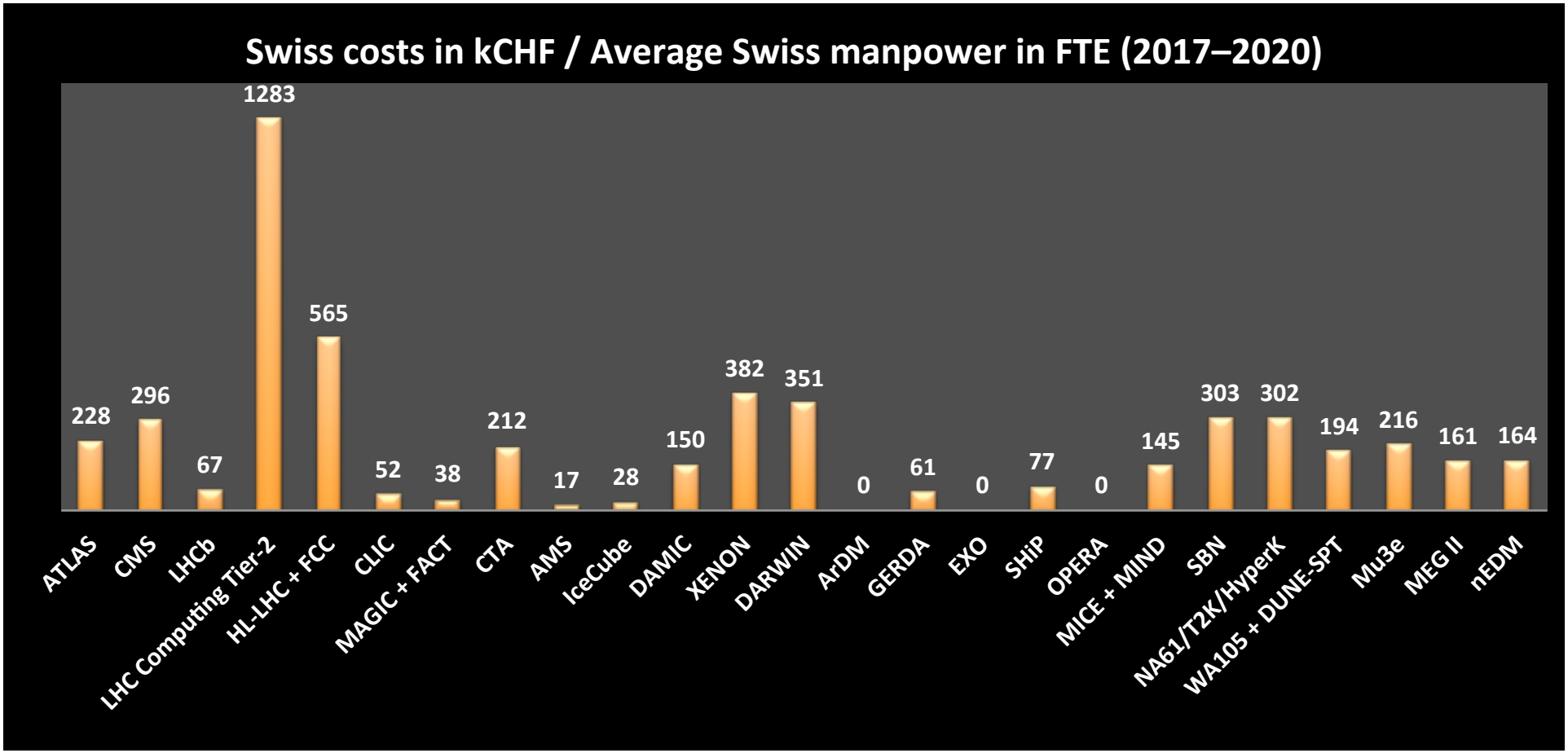
- Bottom line:
  - FLARE pot may increase by up to 45% but ...
  - ... if 20–25% of FLARE goes to non-CHIPP projects, then underfunding of CHIPP projects is ~20 MCHF (~40%) for the period 2017–2020

Total desired Swiss investments



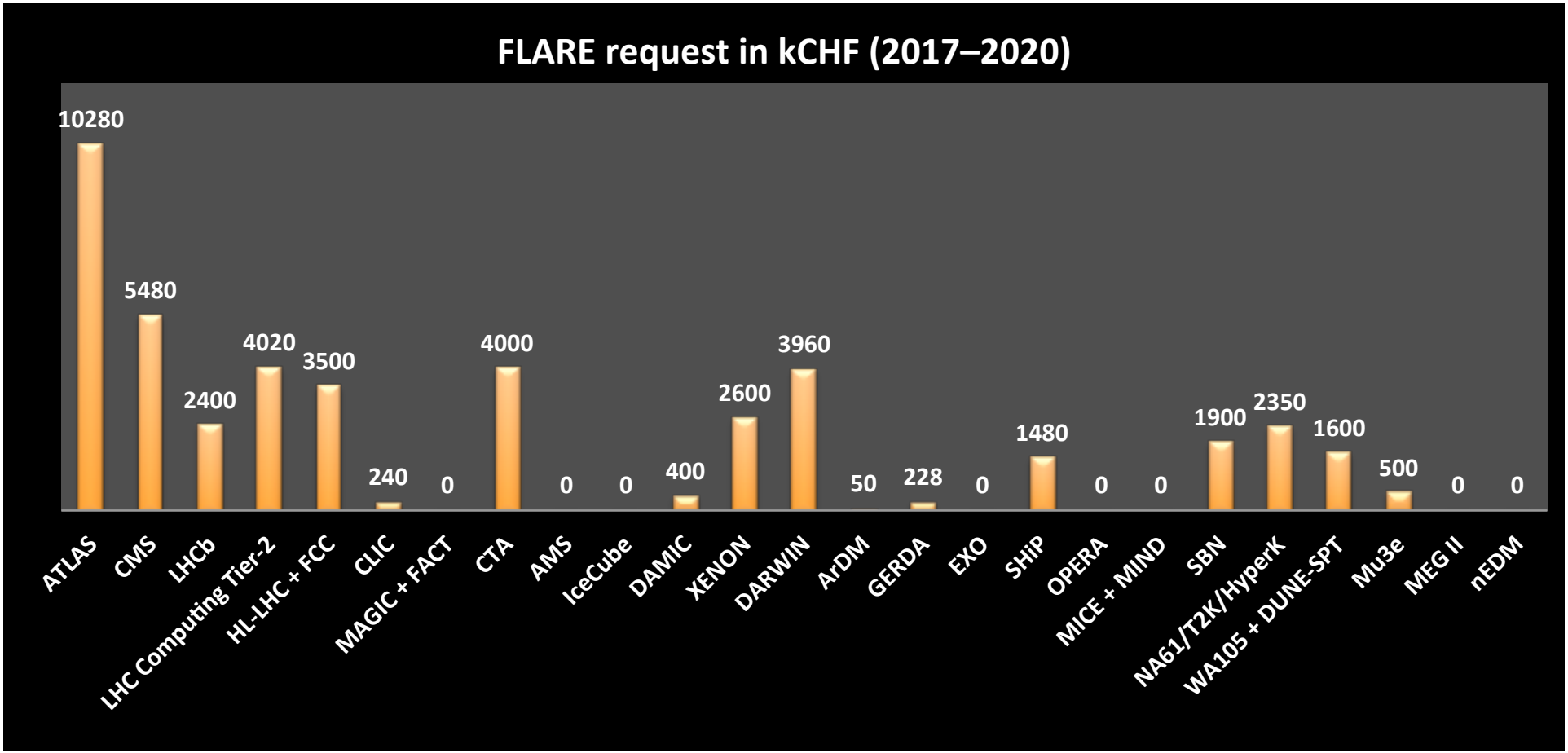
- From all sources, no manpower included

Total desired Swiss investments / FTE



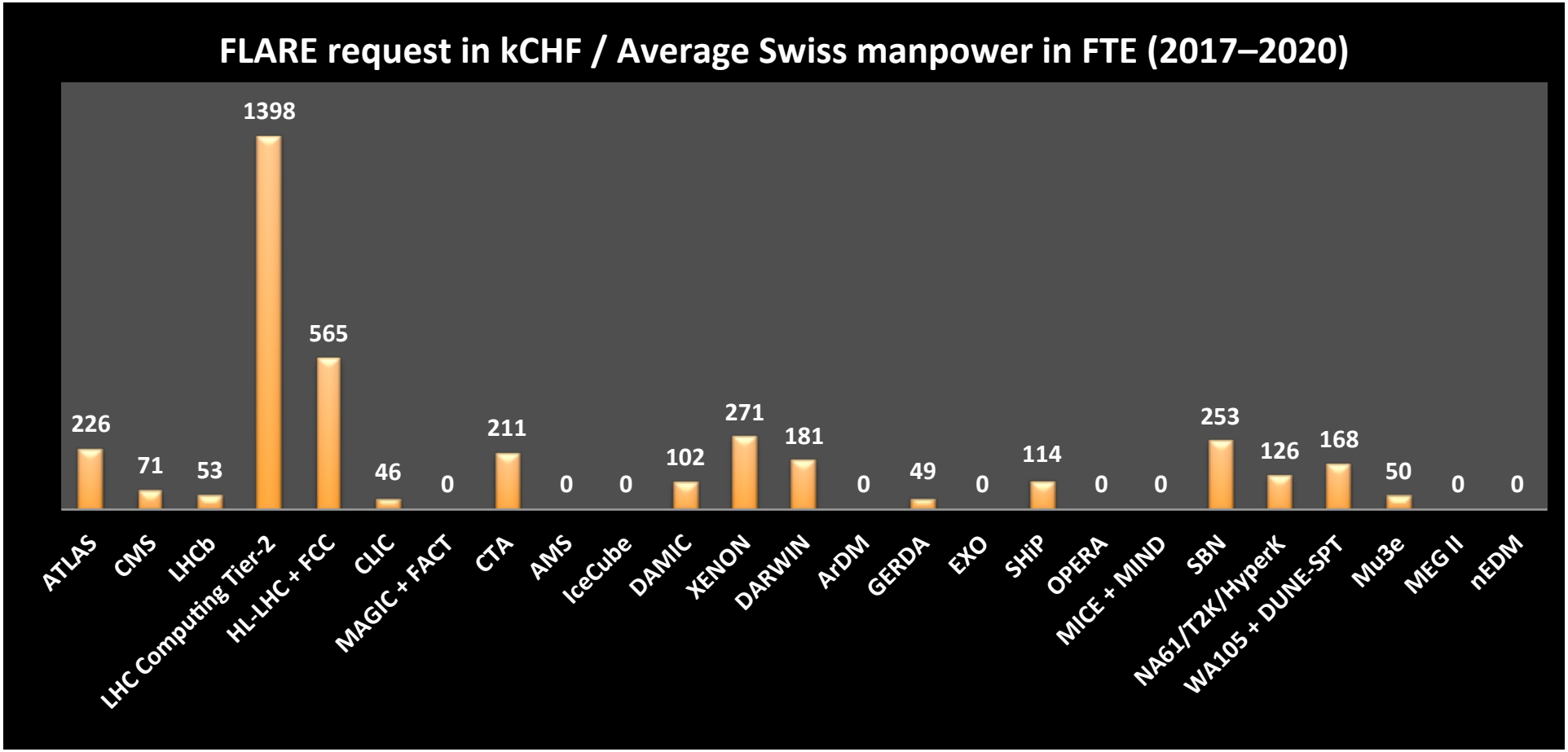
- From all sources, no manpower included

Desired FLARE funding



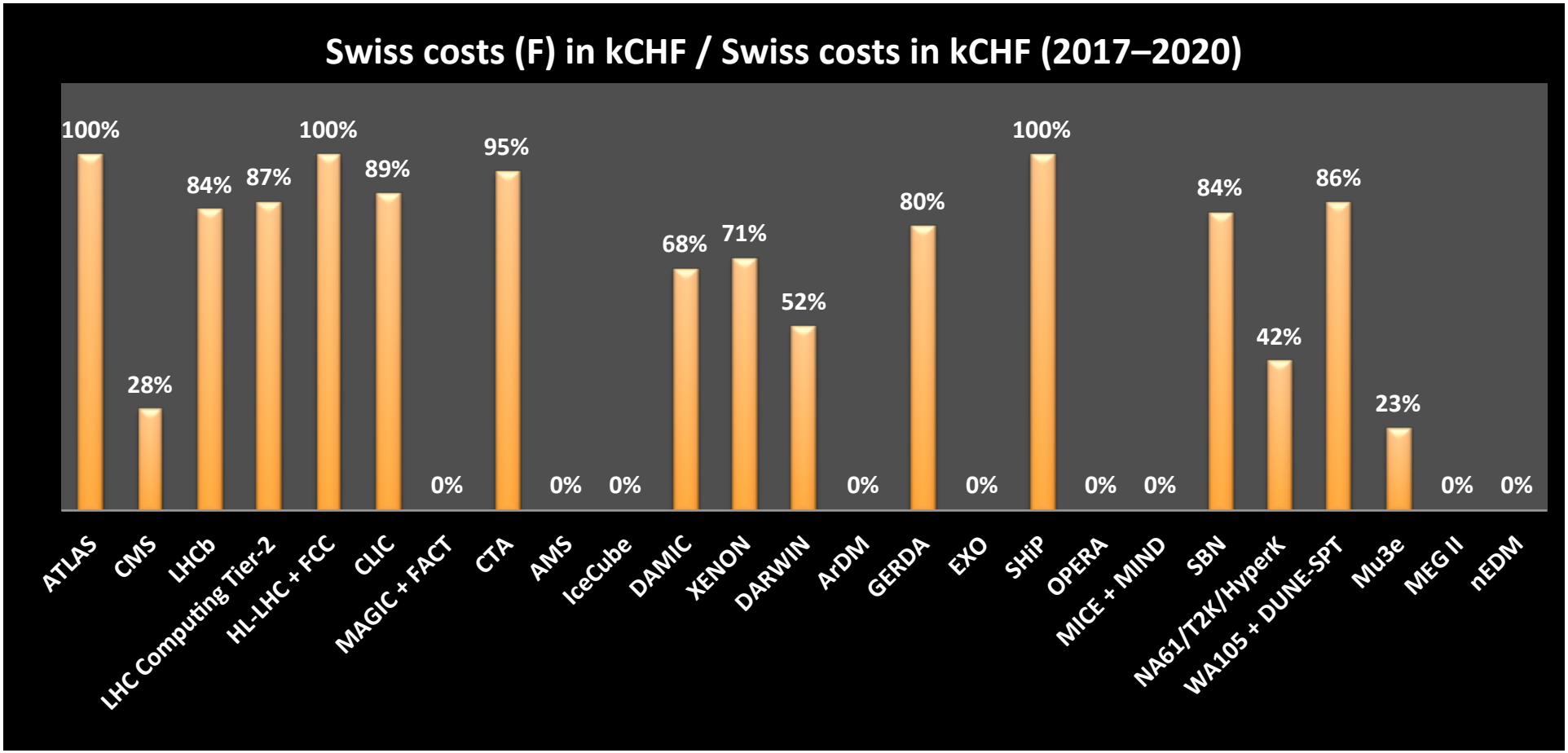
- Includes FLARE manpower, excludes M&O LHC experiments

Desired FLARE funding / FTE



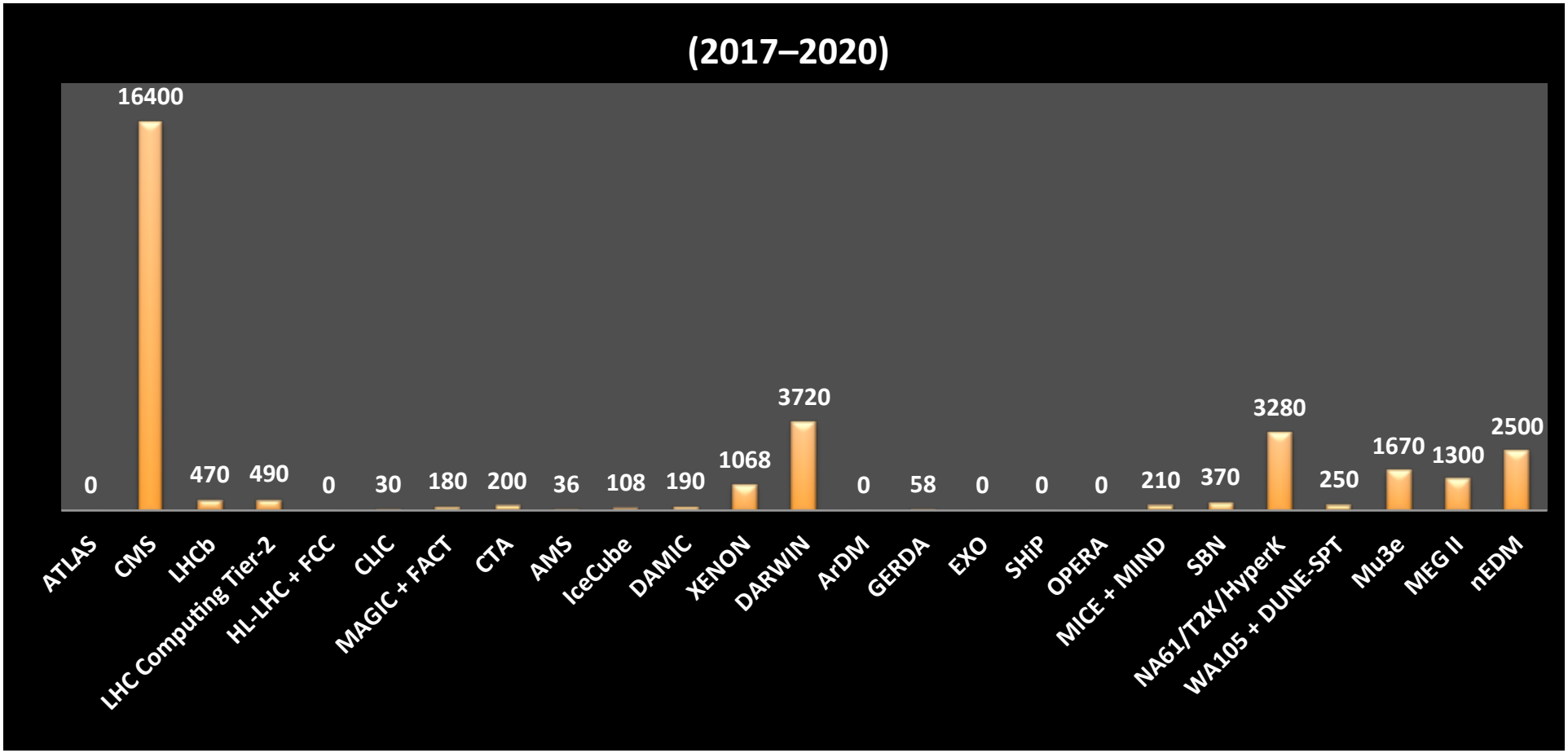
- Includes FLARE manpower, excludes M&O LHC experiments

Fraction of total desired Swiss investment requested from FLARE



- No manpower incuded

Expected funding from non-FLARE sources



- No manpower included

My remarks (High Energy)

- ATLAS
  - largest FLARE request (= twice the second largest), 10 MCHF in 2017–2020
  - 100% of funding expected from FLARE
  - high FLARE kCHF/FTE
  - Swiss contribution to Phase-2 upgrade (~14 MCHF) not defined yet, first cost/funding matrix to be presented in Oct 2015 RRB
- CMS
  - largest Swiss investment (but 15 MCHF expected from ETH domain)
  - only 28% of funding from FLARE in 2017–2020 (picture may change later)
  - reasonable FLARE kCHF/FTE
  - Swiss contribution to Phase-2 upgrade (~25 MCHF) not defined yet, first cost/funding matrix to be presented in Oct 2015 RRB
- LHCb
  - 65% of upgrade investment (4.187 MCHF) expected from FLARE in 2013–2020
  - reasonable FLARE kCHF/FTE

My remarks (High Energy)

- M&O for ATLAS+CMS+LHCb
  - must stay as first priority and be fully funded
- Tier2 computing
  - investment and manpower increase with time from 840 kCHF to 1020 kCHF
  - shouldn't the computing cost stay constant ???
- HL-LHC + FCC
  - 100% of funding expected from FLARE
  - very high FLARE kCHF/FTE
  - HL-LHC is supposed to be funded by CERN (i.e MS contributions)
- CLIC
  - ramping down
  - reasonable FLARE kCHF/FTE

My remarks (Astroparticle)

- CTA
  - significant Swiss investment
  - 95% of funding from FLARE in 2017–2020
  - high FLARE kCHF/FTE
- DAMIC
  - very small effort, single PI
  - significant FLARE kCHF/FTE
  - PI also on DARWIN and CMS, both asking significant funding from FLARE
- XENON and DARWIN
  - significant non-FLARE funding
  - high FLARE kCHF/FTE, each
  - why do these two experiments need money at the same time ?

My remarks (Neutrino)

- SHiP
  - 100% of funding from FLARE
  - significant FLARE kCHF/FTE
  - SHiP not approved by CERN and does not qualify for FLARE funding (AFAIK)
- SBN
  - 85% of funding from FLARE in 2017–2020
  - high FLARE kCHF/FTE
  - PIs also on ATLAS, which asks the most from FLARE
- NA61/T2K/HyperK
  - 42% of funding from FLARE in 2017–2020
  - significant FLARE kCHF/FTE
  - plan to submit HyperK LoI in Nov 2015
- WA105/DUNE-SPT
  - 85% of funding from FLARE in 2017–2020
  - high FLARE kCHF/FTE

Pillar sharing scenario

- 2016:
  - 7.8 MCHF in FLARE, assume 6.25 MCHF (80%) for CHIPP projects
- 2017–2020:
  - Assume 38.4 MCHF in FLARE 2017–2020, out of which 30 MCHF (78%) for CHIPP projects

	FTE %	Share %	Available 2016	Desired 2016	Available 2017–2020	Desired 2017–2020
High (+Low) Energy	61%	60%	3.75 MCHF	5.2 MCHF	18 MCHF	30.3 MCHF
Astroparticle	21%	20%	1.25 MCHF	2.0 MCHF	6 MCHF	11,0 MCHF
Neutrino	18%	20%	1.25 MCHF	1.8 MCHF	6 MCHF	7.6 MCHF
Total	**100%**	**100%**	**6.25 MCHF**	**9.0 MCHF**	**30 MCHF**	**48.9 MCHF**

- Note:
  - total amounts are UPPER limits ?
  - above sharing according to declared FTEs, could do differently ...