

# Cross Calibration between Himawari-8/SEDA and GOES-16/SEISS

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#### Space Environment Data Acquisition Monitor (SEDA) onboard Himawari-8,9



**Proton Sensor** 

<u>(8 Units)</u>

				NOT HIMAWARI / SEDA DATABASE WEB
	Items		Description	HOME DATABASE REALTIME FLOT
	Number of Channels		Protons : 8 (individual 8 sensor elements) Electrons : 8 (8 stacked plates in one elements)	HIMAWARI / SEDA DATABASE
	Energy Range		Protons : 20 MeV – 100 MeV Electrons : 0.2 MeV – 5 MeV	2020年4月14日 ポウェブジイトのARLを受し、ボレル・ボウェブゲイトへのリンク考察部されているのや容容をはしたまた 総合ているのは、水気のは考察していたますが、ドレルロへの空気を活動、いたします。 (安美的ARL) https://www.even.nt.go.jp/mmwar-sada/ 14 April, 2020 The ULL of his website has changes. We apologize for any inconvenience, but please update your bookmark and inks to the new URL. (New KR) Tapts://www.even.nt.go.jp/mmwari-sada/ 2027年9月11 Carlielator/ーダング・バルー信にて行動に特殊的ないろっていたたかフィーバルを受用しました。2017年8 月208日-プーダングンイルロー信にて行動に分析のためにまた。2017年8
	<b>Time Resolution</b>		10 sec.	
	Field of Vie	W	Protons : ± 39.35 deg. Electrons : ± 78.3 deg.	- (ILLERBERV)2124/w  1 September, 2017 We have updated the CDF Rie, as it contained the inaculate information. Please download and refresh the new data if you downloaded before August, 2017. However there is no problem with the toot file.  1034WWWIEJSEDA DATABAGE
sor sector purp - Nea NICT. space Hima		secto purpo - Nea NICT. space Himav	<ul> <li>energy particle environment over Japanese r will be monitored by SEDA as housekeeping ose.</li> <li>r-real time SEDA data is provided from JMA to We have been provided SEDA data as part of exeather information.</li> <li>vari-8 Launch: 2014/10/07</li> <li>vari-9 Launch; 2016/11/02</li> <li>vari-8/SEDA data is available from Nov. 03, 2014.</li> </ul>	<text><text><section-header><text><text><text><text><section-header><text><text><text><text><text><text><text></text></text></text></text></text></text></text></section-header></text></text></text></text></section-header></text></text>

R h-용료, Common Data Format(CDF)용로 x data are provided by text and Commo たなお、SEDAデータのバーションや仕様 しての注意は、下記リンクをご覧下さい。 d spericication of SEDA data can be described in a following lini † PAGE TOP https://aer-nc-web.nict.go.jp/himawari-seda/

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DATA POUT

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関連リンク / Links NOAA / SWPC

気象衛軍のよわり運用事業株式会社 imawari Operation Enterpri orporation

- 受電振宇宙システム総合サイト Mitsubishi Electric Space System

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seda@ml.nict.go.jp COT AND A STREET AND

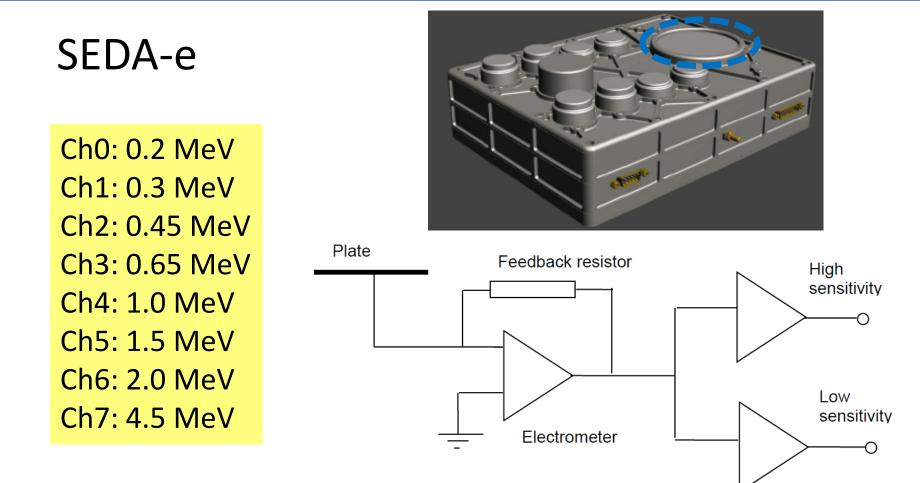
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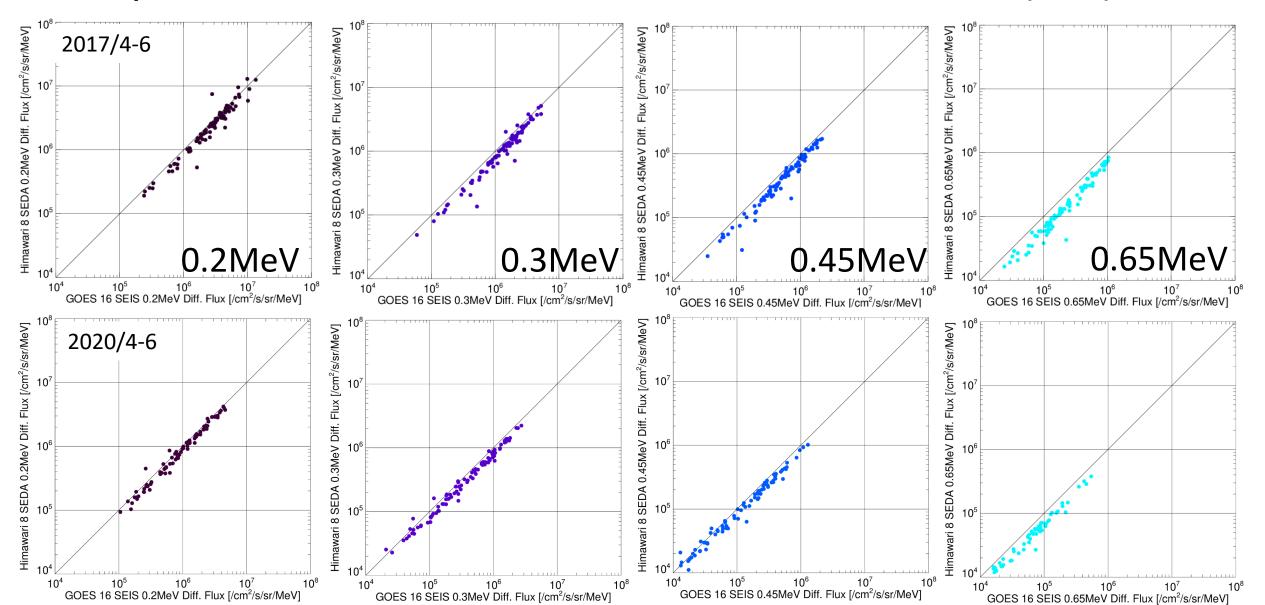
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SEDA-e measures internal charging currents produced from high energy electrons (0.1 – 4.5 MeV) collected by 8 plates arranged in a stack. Electron fluxes are estimated from the charging currents. <u>To estimate the charging currents</u>, <u>Bias current (voltage) needs to be subtracted</u>. <u>Bias current is a function of temperature</u>, and it was estimated by experiment on the ground.

Comparison between 2017/04-06 and 2020/04-06(1/2)



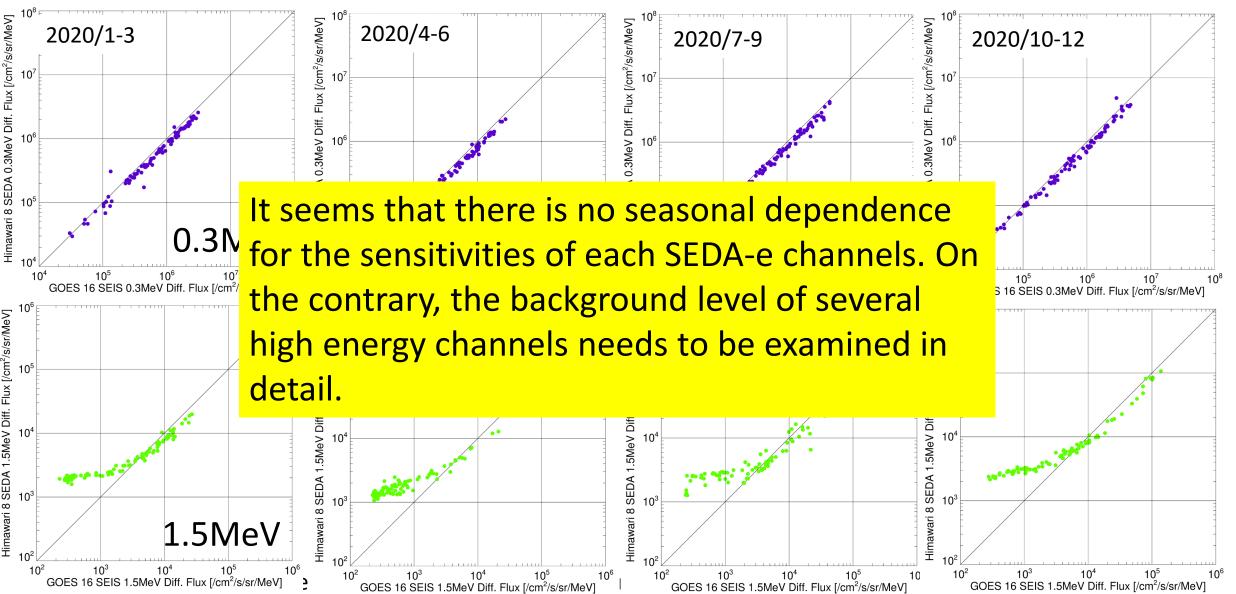
GOES 16 SEIS 1.0MeV Diff. Flux [/cm<sup>2</sup>/s/sr/MeV]

Comparison between 2017/04-06 and 2020/04-06(2/2) Himawari 8 SEDA 1.0MeV Diff. Flux [/cm<sup>2</sup>/s/sr/MeV] 2017/4-6 Flux [/cm<sup>2</sup>/s/sr/MeV] <sup>-</sup>lux [/cm<sup>2</sup>/s/sr/MeV] Our initial comparison between Himawari-8 and GOES 16 suggests that \*There is no significant long-term variation of the 10<sup>2</sup> <sup>2</sup> 10<sup>3</sup> GOES 16 SEIS 1 sensitivity of each SEDA-e channel. Himawari 8 SEDA 1.0MeV Diff. Flux [/cm<sup>2</sup>/s/sr/MeV] 2020/4-\*The level of SEDA's background count is increasing in 2020. 8 SEDA 1.5MeV Dif SEDA 2.0MeV  $10^{4}$  $10^{3}$ ω Himawari Himawari 10<sup>2</sup> 10<sup>3</sup> 10<sup>4</sup> 10<sup>2</sup>  $10^{3}$ 10<sup>4</sup> 10<sup>6</sup> 10<sup>5</sup>  $10^{6}$ 10<sup>2</sup> 10<sup>3</sup> 10<sup>4</sup> 10<sup>t</sup>

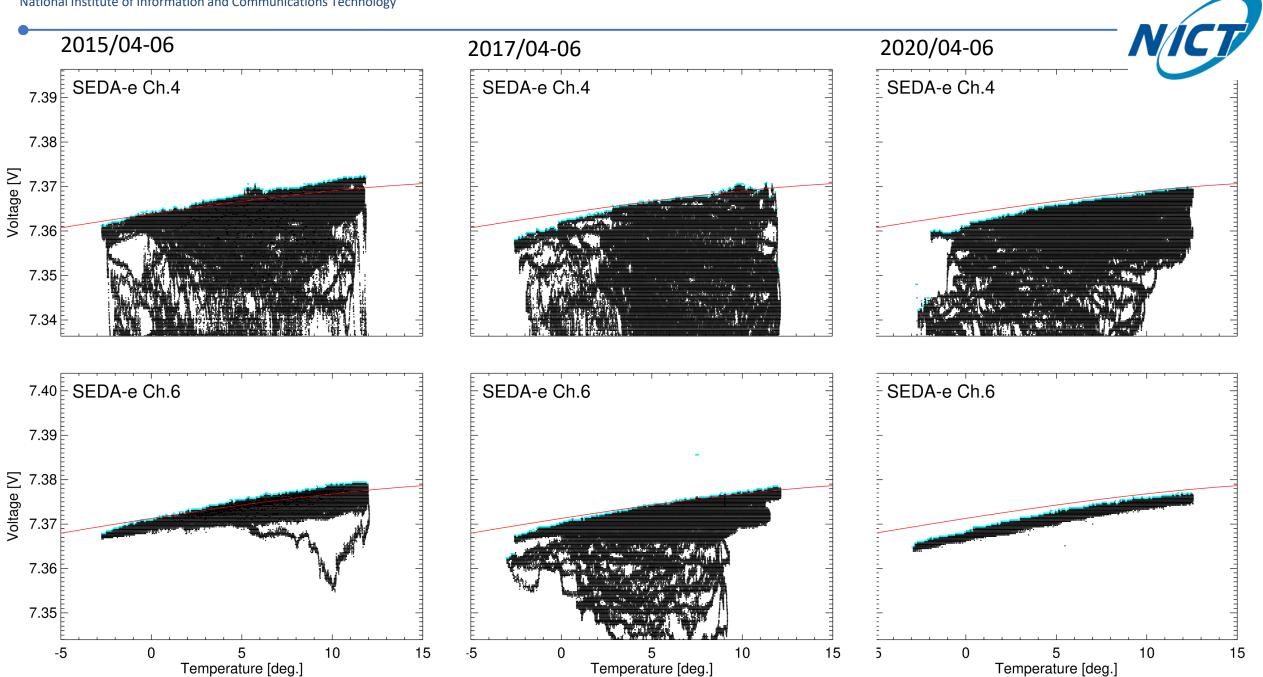
GOES 16 SEIS 1.5MeV Diff. Flux [/cm<sup>2</sup>/s/sr/MeV]

GOES 16 SEIS 2.0MeV Diff. Flux [/cm<sup>2</sup>/s/sr/MeV]

## Seasonal dependence



#### National Institute of Information and Communications Technology





## Summary

- We have done cross-calibration between high energy electron sensor of the Himawari-8/SEDA(SEDA-e) and that of GOES-16/SEISS.
- The comparison between the period of 2017/04-06 and that of 2020/04-06 suggests as follows;
  - There is no significant long-term variation of the sensitivity of each SEDA-e channel.
  - The level of SEDA's background count is increasing in 2020. It seems BIOS voltage seems to change as time goes on.
- There is no seasonal dependence for the sensitivities of each SEDA-e channels. On the contrary, the background level of several high energy channels needs to be examined in detail. Increasing of bias current may play a role of enhancement of background count level.