

B2GM travel footprint

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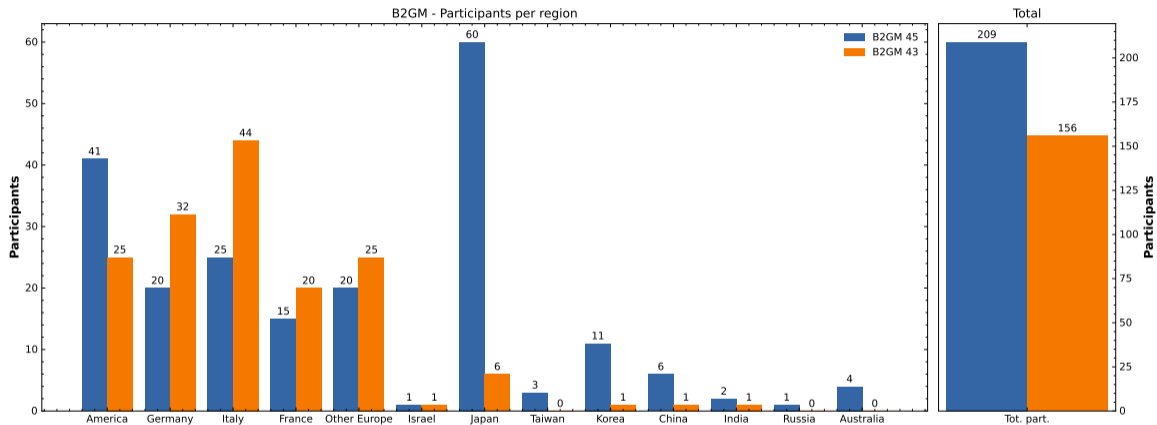
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HELMHOLTZ

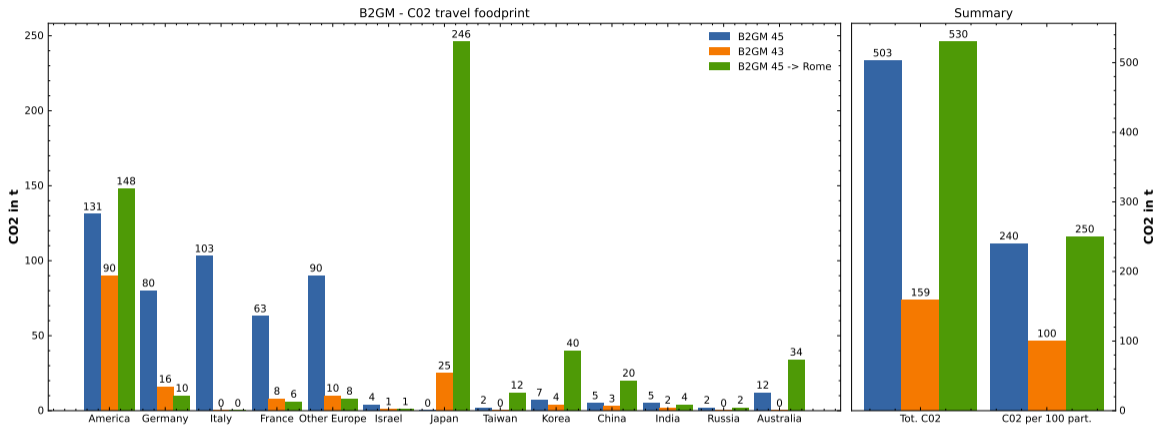


- Study to get an idea of the B2GM travel footprint
- Rough estimation
 - ▶ Home institutes used as travel start
 - No travel information available
 - ▶ Average CO₂ value used for countries
 - Direct fly from main airport (see backup)
 - ▶ CO₂ production on-side not included
- Study two B2GMs
 - ▶ B2GM45 → After COVID at KEK
 - ▶ B2GM43 → In Rome



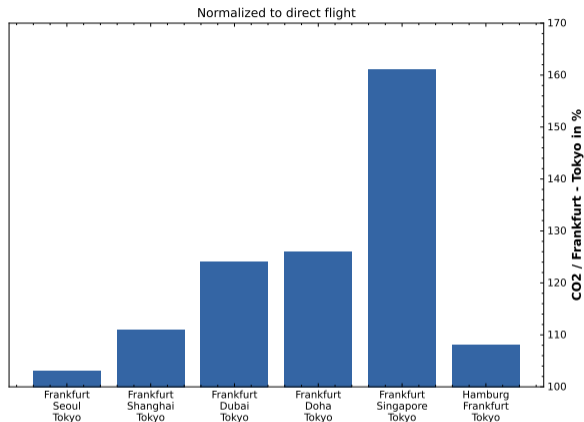
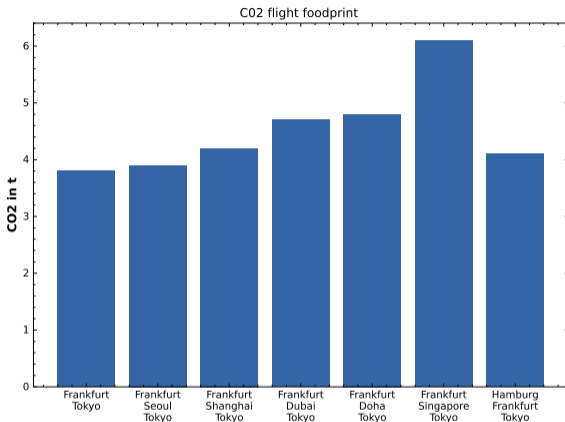
- B2GM 45 at KEK, B2GM 43 in Rome
- Home institute used as home destination
- For B2GM 43 only in-person participants counted

- Asian (Japanese) participants strongly reduced for B2GM in Europe



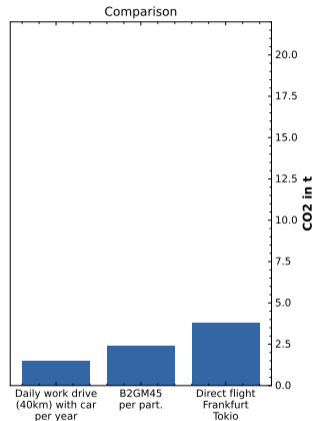
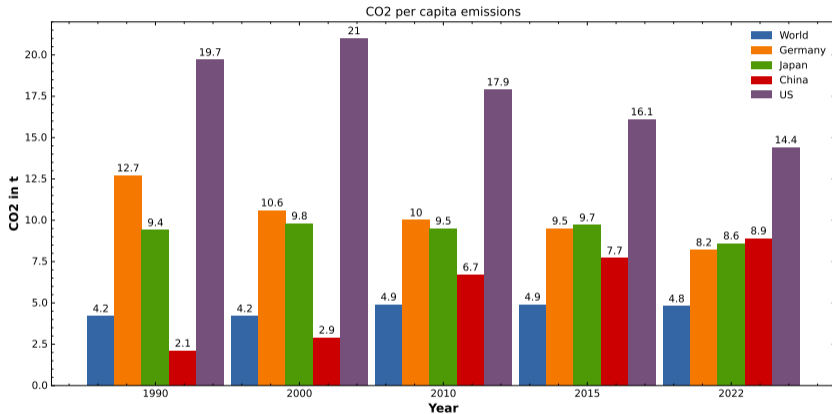
- B2GM 45 at KEK, B2GM 43 in Rome
- Home institute used as home destination
- For Rome only in-person participants counted
- Average CO2 emissions for a direct flight per region used

- CO2 travel emission strongly reduced for B2GM in Europe
- Assuming the same participants as B2GM 45 but hosted in Rome CO2 emission is comparable



- Flights with stops increase CO2 emission significantly
- E.g. use 20% more CO2 emission in average per participant of B2GM due to connection flight and/or stops:
Tot. CO2 increased from 503 t to 602 t

Cite: <https://commission.europa.eu>



- B2GM produces per participant around 50% of the world average CO2 per capita emissions per year
- B2GM produces per participant more CO2 emissions than using a car every workday for one year (40km per day)
- DESY switched to 100% renewable energy source in 2023 → 39.000 t CO2 reduction per year (≈49.000 households)

- Quite some CO₂ production from B2GM travel (3 times per year)
- Also difficult to what to compare
 - Large compared to CO₂ production of individual persons, small compared to production by companies/institutes
- Analysis quite rough → First step would be collect more precise data during B2GM registration
 - ▶ Traveled from
 - ▶ How long staying at KEK
 - ▶ ...
- B2GM in Rome
 - ▶ CO₂ footprint much smaller
 - ▶ Significant reduction of participations from Asia
 - ▶ With same participations as B2GM 45 even more CO₂ production
 - If repeated "real" number somewhere between

Backup



Region	CO2 emission per participant	
	B2GM 45 KEK	B2GM 43 Rome
America	3.2	3.6
Germany	4.0	0.5
Italy	4.1	0.0
France	4.2	0.4
Rest of Europe	4.5	0.4
Israel	3.7	0.8
Japan	0.0	4.1
Taiwan	0.8	3.9
Korea	0.6	3.6
China	0.9	3.4
India	2.5	2.2
Russia	1.7	1.8
Australia	3.0	8.4