Blosc2

Compress Better, Compute Bigger, Share Faster

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ironArray

PyData Global

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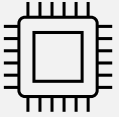
Agenda

Blosc2: Compressing Better



Blosc2: Computing Bigger

Caterva2: Sharing Faster

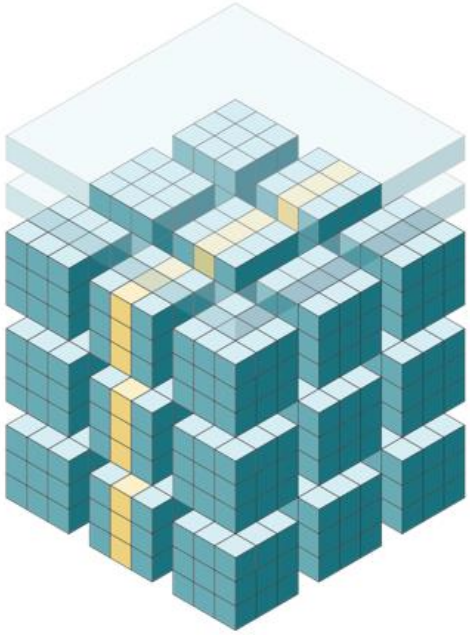
Who is ironArray SLU?

Team of experts empowering you to harness the full potential of compression for computation and data sharing capabilities.

We are here to help!

ironArray

https://ironarray.io



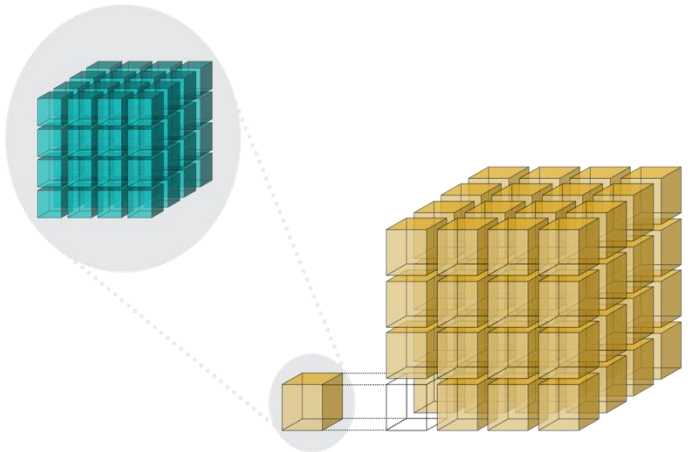
Blosc2: Compressing Better

For multidimensional, binary data

https://www.blosc.org/

Blosc2 Architecture

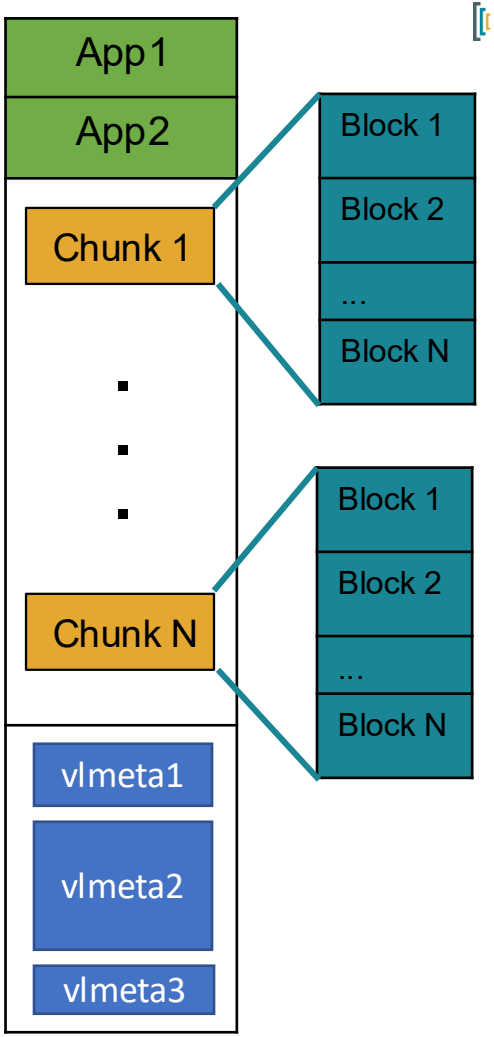
- ✓ 64-bit containers
- ✓ Metalayers for adding info for apps and users
- ✓ Blosc2 NDim: Multi-dim blocks and chunks



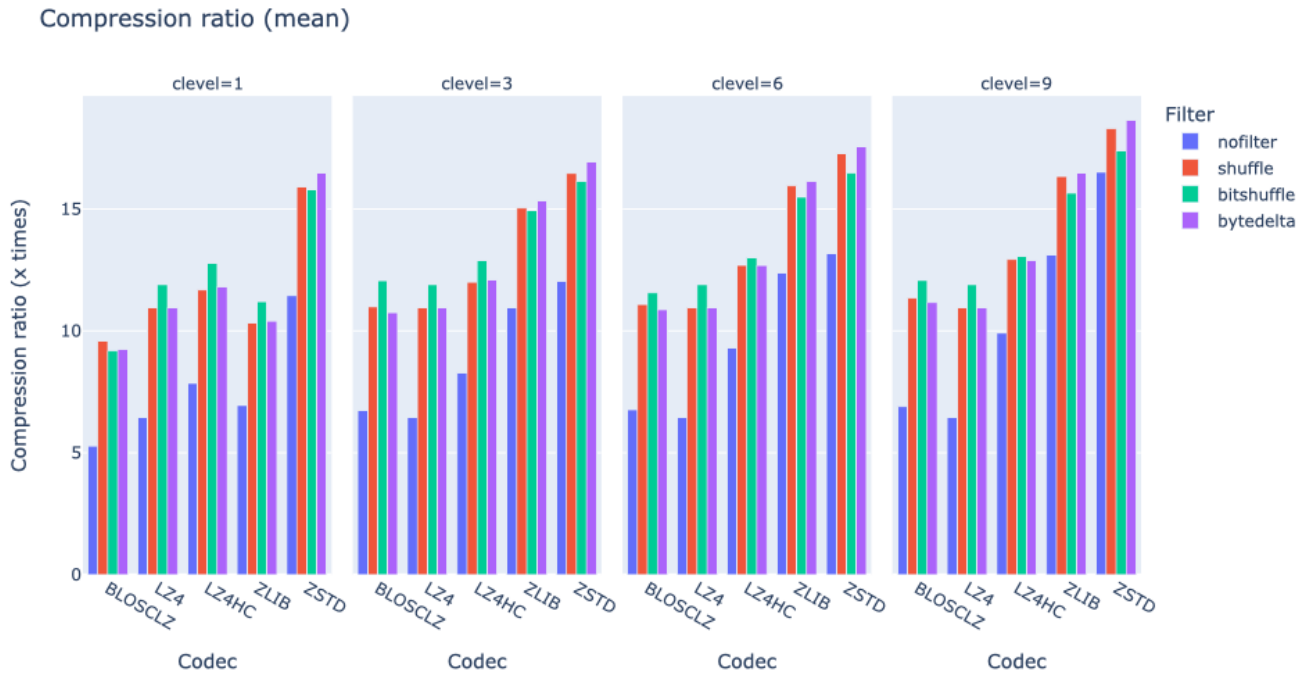
Header:
Fixed Length
Metalayers

Data:
Super-Chunk

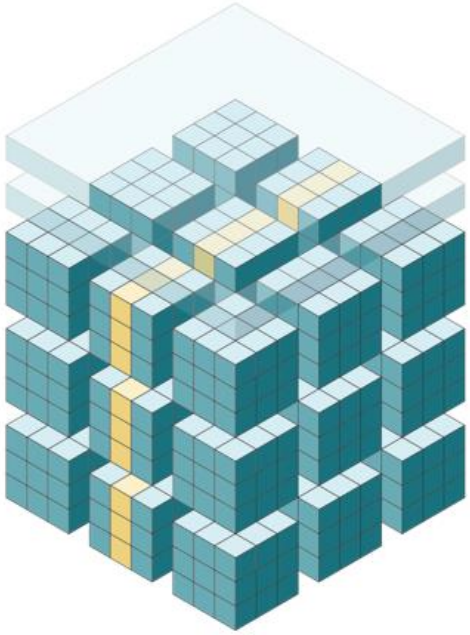
Trailer:
Var Length
Metalayers
(up to 2 GB)



Different Codecs and Filters



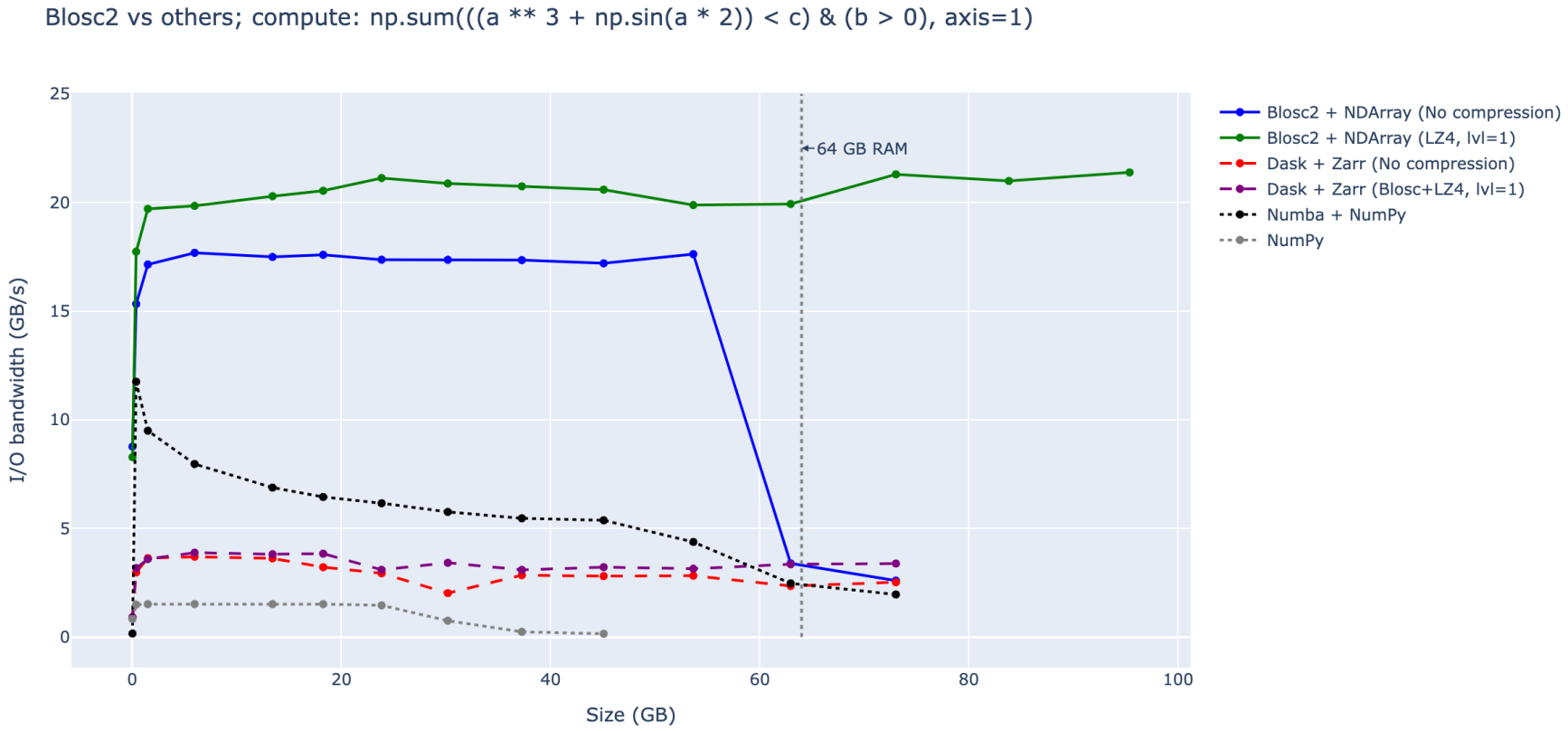
How to predict the best combination?
https://ironarray.io/btune



Blosc2: Computing Bigger

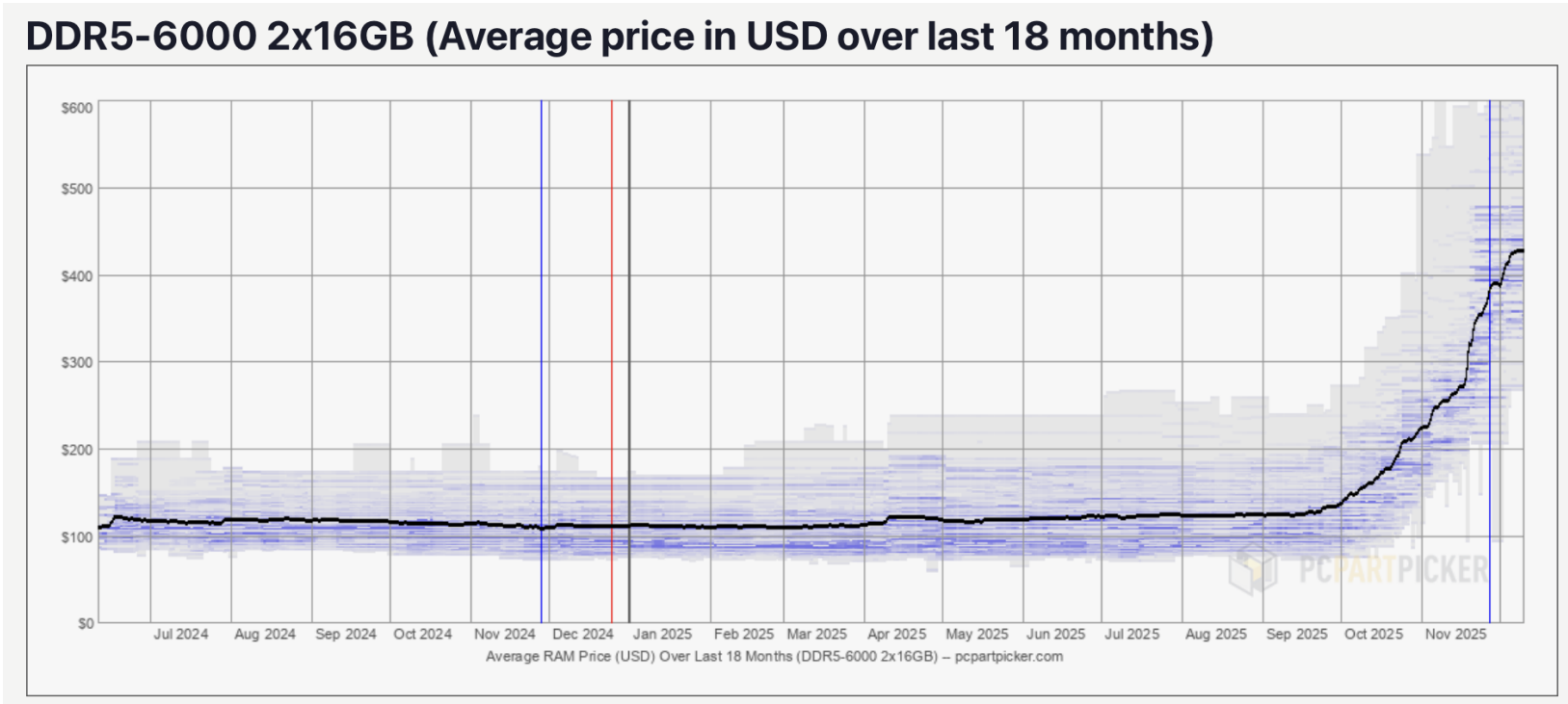
Compute with your big compressed arrays, fast!

Compressed Computing (In-Memory)



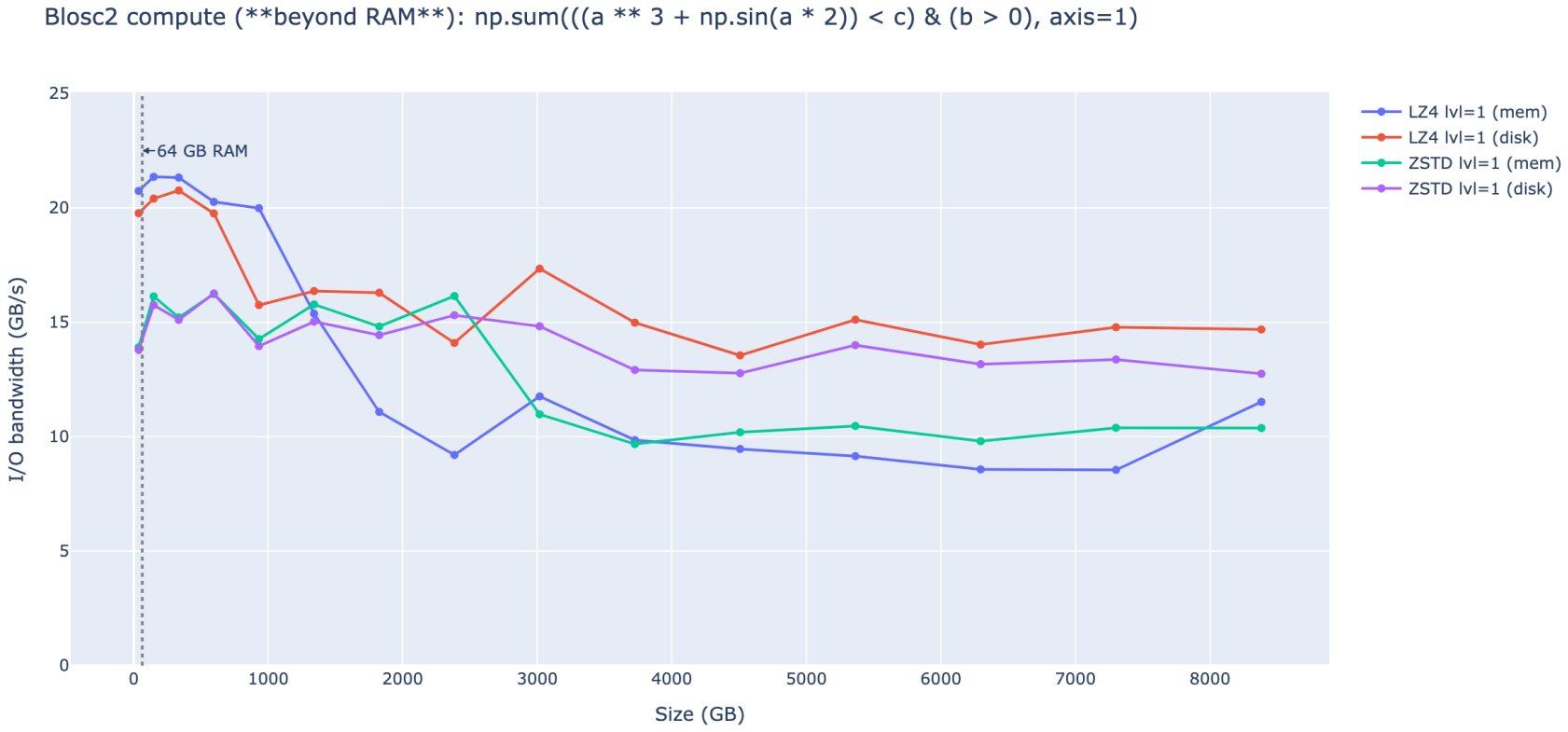
https://ironarray.io/blog/compute-bigger

RAM Matters (But Is Becoming Scarce)



https://pcpartpicker.com/trends/price/memory/

Going Bigger: Computing Beyond RAM



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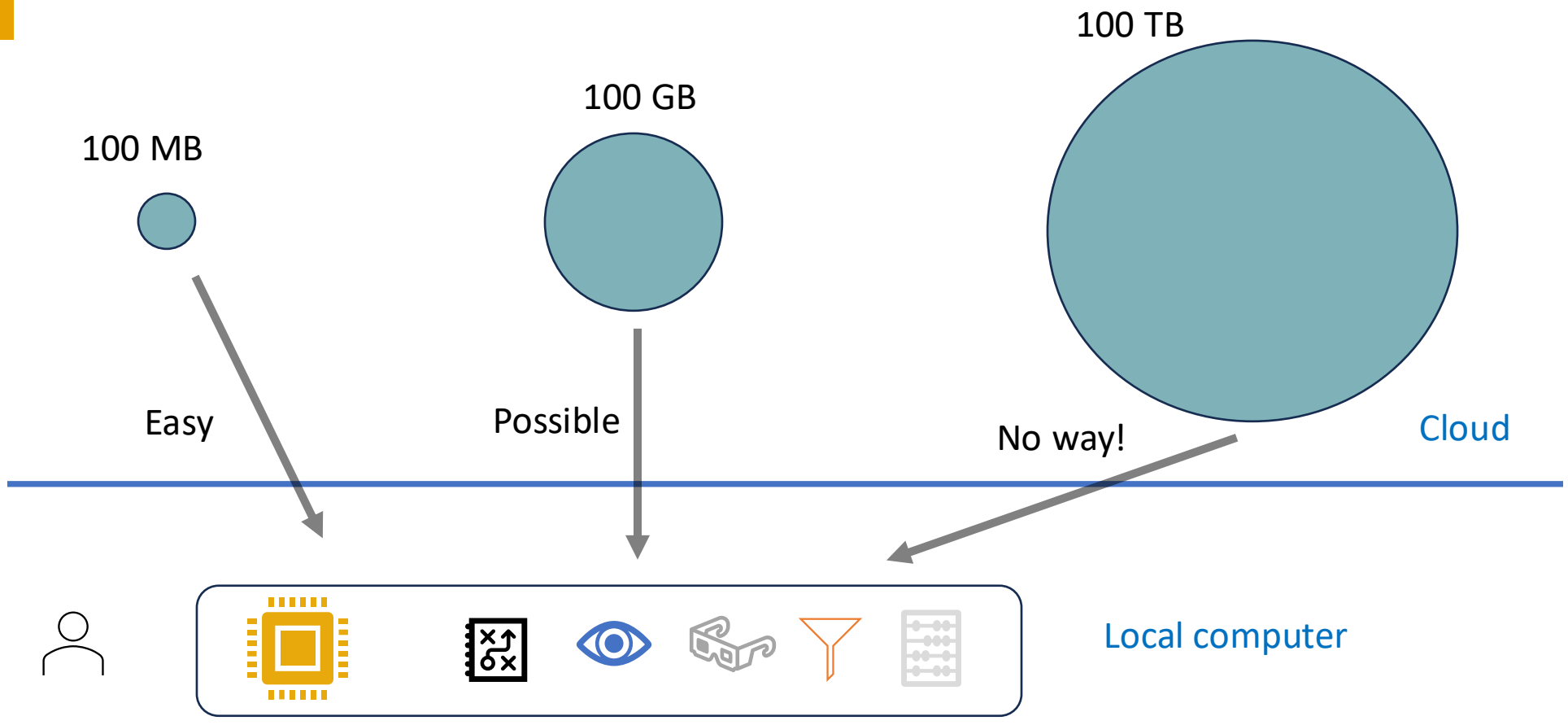
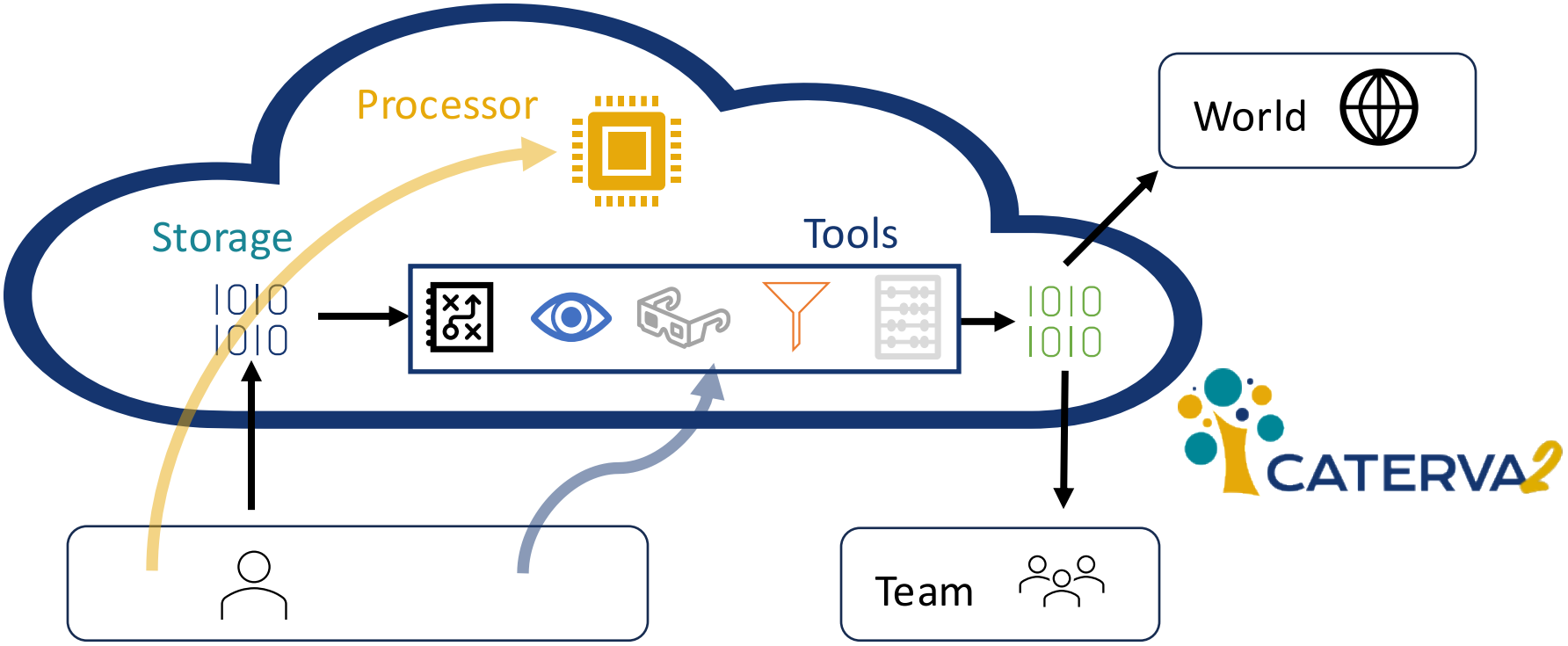
Bring Computation Closer To Where Data Is Stored

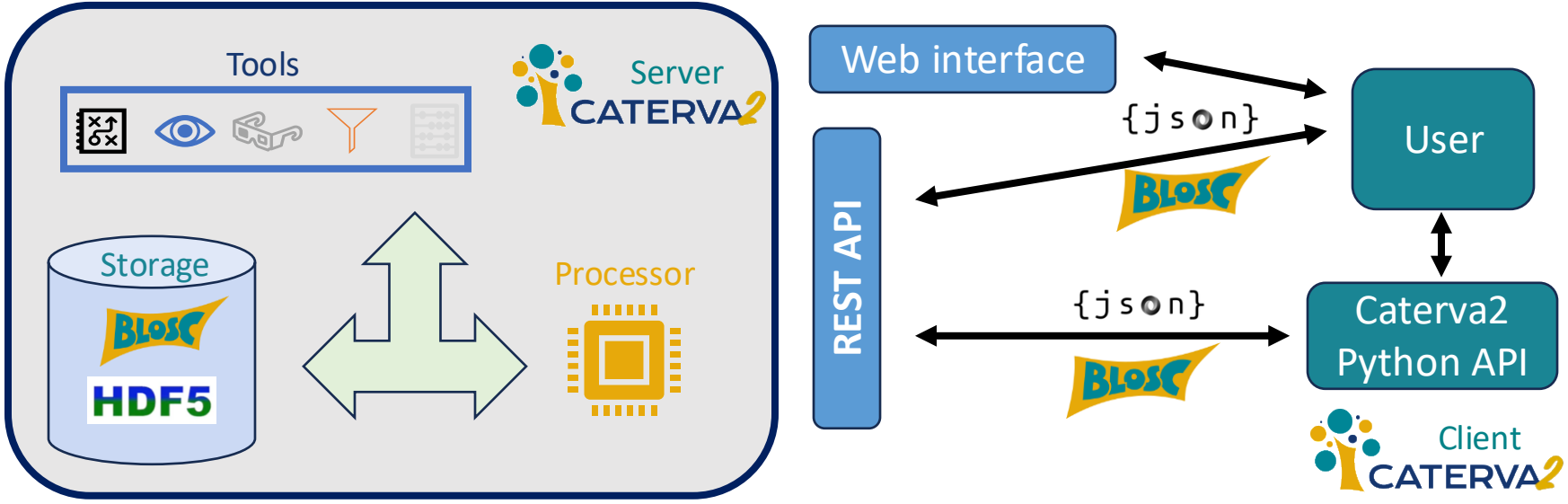
Data Is Affected By Physical Laws!



Computation Needs To Be Closer To Were Data Is Stored



Caterva2:
Computing, Compressing And Serving Data



Your Remote Data Workflows - Optimised

Rapid Compute, Efficient Storage, Fast Sharing

https://ironarray.io/caterva2

- Open Source

https://ironarray.io/cat2cloud

- Caterva2 in the cloud
- Operated by ironArray

Choose what you prefer – we help you with setup

Hands-on Time

Materials:

https://github.com/Blosc/PyData-Global-2025-Tutorial