

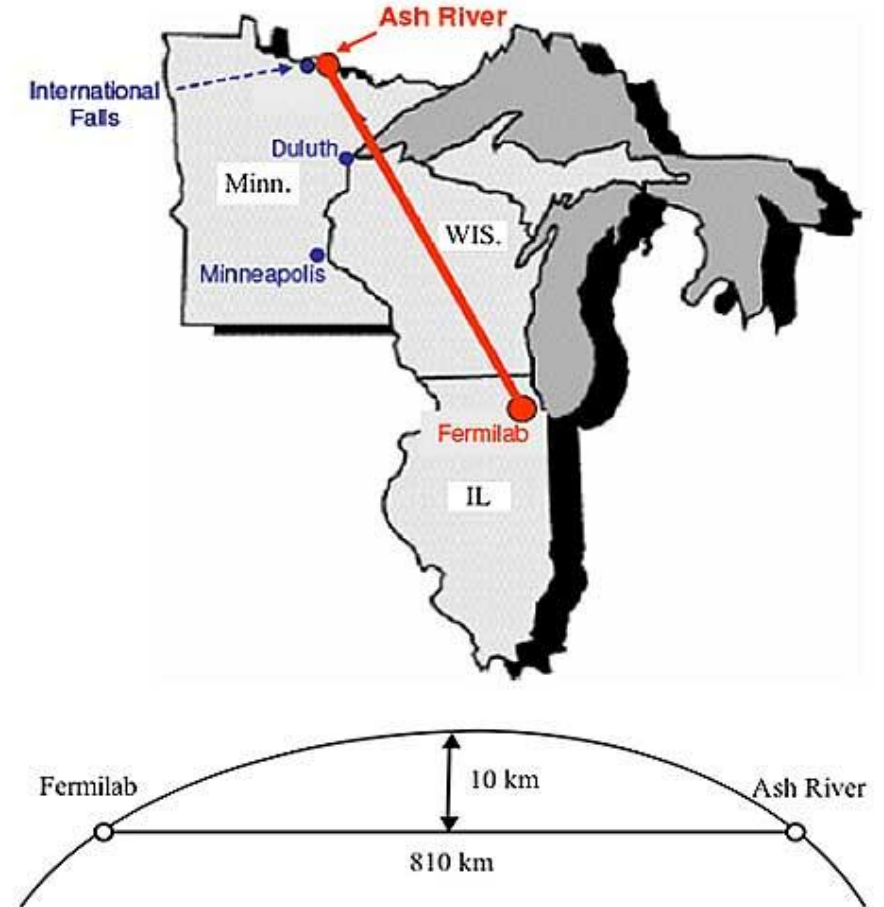
# CESNET – Fermilab LHCONE ? for the NOvA experiment

How to increase the bandwidth?

LHCONE meeting, Taipei

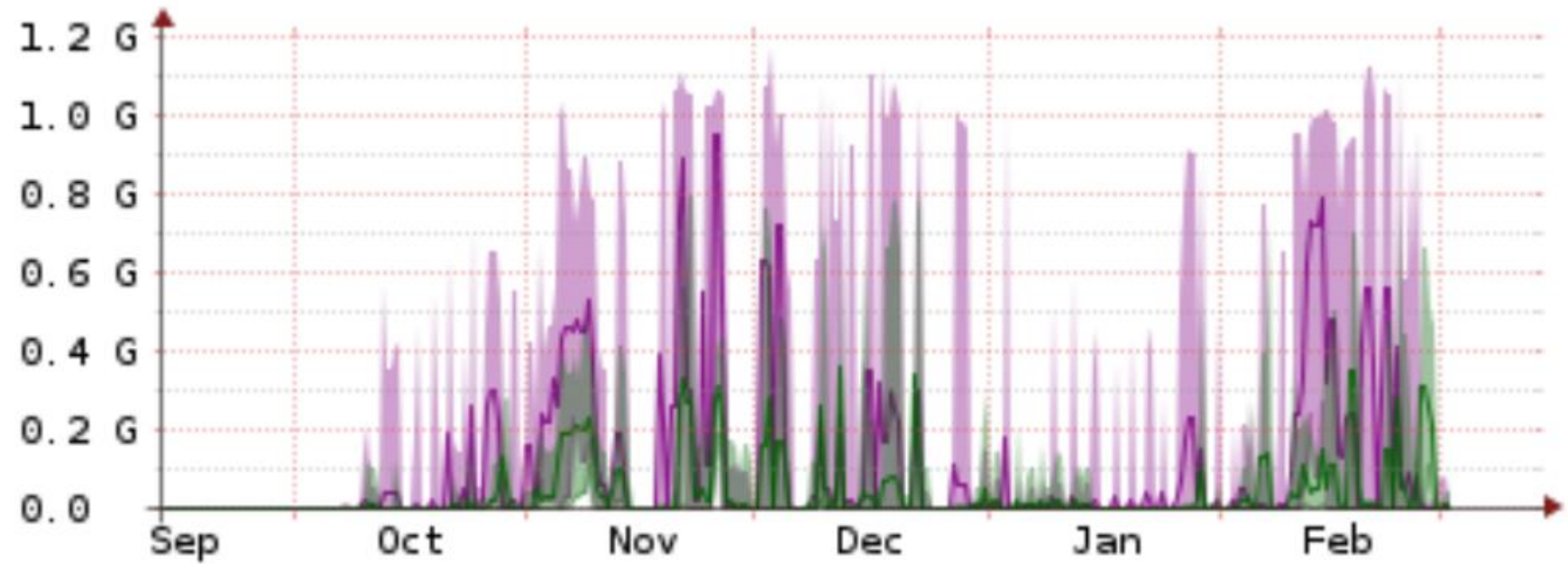
# NOvA experiment at FNAL

- NOvA experiment  
Neutrino oscillation accelerator  
experiment with FD at Ash River
  - Oscillation parameters
  - CP violation
  - ...
- FZU offers 1500 job slots on its  
Tier2  
25% of computing capacity to  
NOvA
- NOvA is taking data
- First publications appearing



## Bit rates [bps]

-6 month



**Input**

min=0.000 max=1.169G avr=105.112M

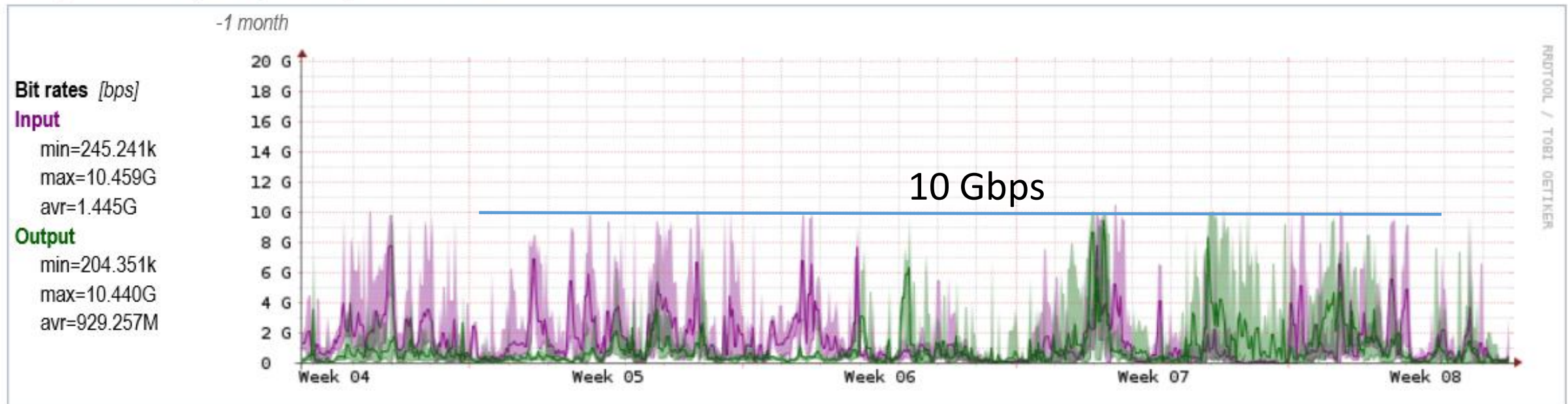
**Output**

min=2.041 max=875.221M avr=37.292M

- 1 Gbps lambda FZU- Fermilab
- Filled when 1 500 jobs start to copy input data
- 3 Gbps might be sufficient
- Job slot increase probable

- Lambda switched-off, traffic over public network
- Seems to be worse than lambda, complaints from people from Fermilab using Prague Tier2
- Is possible to use LHCONE for this traffic?
- Implementation in Fermilab? Institute of Physics CAS – computing capacity for NOvA is internal capacity of Teir2
- Existing LHCONE traffic in Prague

TenGigabitEthernet7/1, Te7/1, LHCONE, 195.113.179.106



- CESNET – FZU
  - LHCONE over 10 Gbps
  - Ready to add another 10 Gbps
- CESNET started informative talks with Geant
- Adding 3+ Gbps lambda would be too expensive
- Using LHCONE seems to be most effective solution
- Similar experience exists with change of lambda to BNL