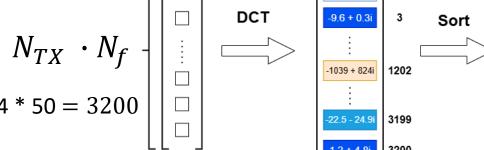
# Channel state information compression task

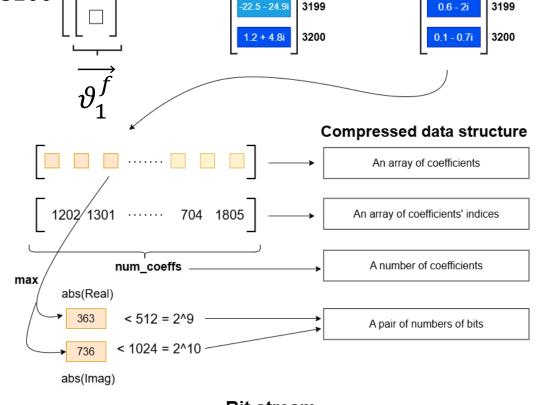
"Main discrete cosine transform values" algorithm

Dmitriy Revayev, 1<sup>st</sup> year graduate student, MIPT

### Compression pipeline



- a bit word containing a number of chosen DCT coefficients
- a bit word containing a pair of numbers of bits used for accurate DCT coefficients representing
- an array of bit words with length num\_bits(1) representing the values of real components of DCT coefficients
- an array of bit words with length num\_bits(2) representing the values of imaginary components of DCT coefficients
- an array of bit words with length bit\_size\_coeff\_inds
  representing the values of initial positions of DCT coefficients



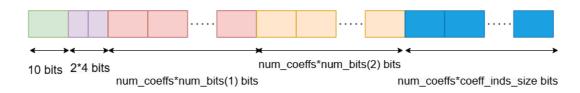
31.6 - 64.6i

-857 - 382i

363 - 736i

num\_coeffs

#### Bit stream



#### Bit stream Indices Coefficients An array of real A number of An array of imaginary An array of positions components coefficients of coefficients components Real vals A number of bits num\_coeffs per real component A number of bits per Imag\_vals coeff inds imaginary component num bits(1) num bits(2) Real\_vals + 1i \* Imag\_vals: -108 + 35i 704 Indices 1202 1301 ..... 704 1805 -1039 + 824i 1202 num\_coeffs -1039 + 824i 1301 IDCT, Reshape 3199 3200 $N_{TX}$ Decompression pipeline

 $N_f^r$ 

## The result of the comparison

