Convolution in Eyeriss V1 PE

Scenario 1:

Filter (1D, single channel): [87 124 -143]

Ifmap 1: [27 -58 21 -76 4 -4 88]

Psum row 1: [-7846 8426 -8169 -5544 -12732]

Ifmap 2: [46 -25 98 60 24 56 -12]

Psum row 2: [-13112 1397 12534 188 10748]

Therefore, 10 psum registers are used in total.

Scenario 2:

Single Ifmap (1D): [88 146 78 -129 -123 -30 68 -61 28 -137]

Filters:

Filter 1: [-47 -46 5 19 21]

Filter 2: [8 -29 32 46 -6]

Interleaved Filters: [-47 8 -46 -29 5 32 19 46 21 -6]

Psum (one per filter):

Output 1: [-15496 -14062 2511 11582 6930 -4368]

Output 2: [-6230 -10700 -1359 5069 -912 -2054]

Interleaved Psums:
[-15496 -6230 -14062 -10700 2511 -1359 11582 5069 6930 -912 -4368 -2054]

Therefore, 12 psum registers are used in total.

Scenario 3:

2 * Interleaved Filters (size=3): [-67 187 138 138 15 -111]

2 * Interleaved Ifmaps (size=5): [74 -64 22 74 73 42 -20 -38 -60 -17]

Psum row: [-7245 31538 32152 17819 -4054]
