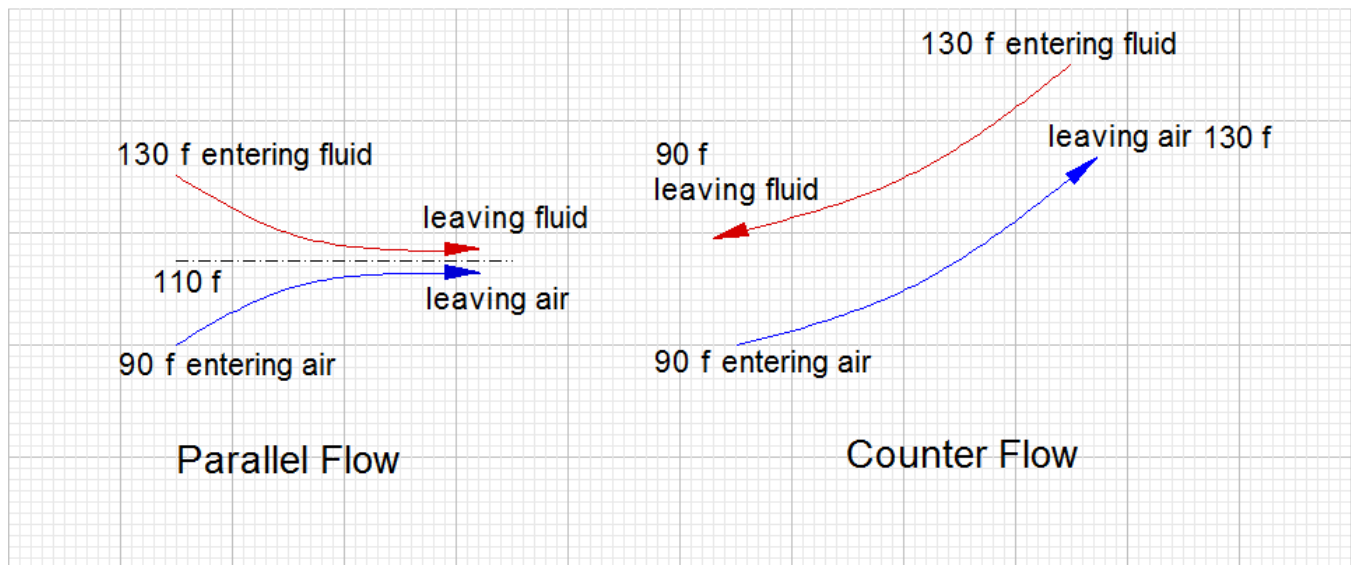


The Small Foot Print paper showed how a conventional 3 row thin coil can be converted to DEEP coil and achieve energy and cost savings. In this process, the 3 row coil was converted to 16 row coil.

The heat exchanger coils can be configured to provide parallel flow, cross flow or counter flow. The following is a graphical representation of the parallel flow and counter flow. A meaningful parallel or counter flow arrangement is not feasible in most of the conventional thin coils with 1, 2 or 3 rows,. Therefore, they are all configured for across flow.



Talking in the context of air conditioning/refrigeration condenser, the primary advantage of the counter flow is that the temperature of the fluid leaving the heat exchanger can be same or close to the ambient air, which is same as the air entering the heat exchanger. Such an outcome is also possible in cross flow situation, but with much larger quantity air movement, which is more energy requirements. By installing a suitable sensor on the fluid leaving the coil, the cfm can be varied by varying the fan speed. Such a configuration will ensure complete sub-cooling of the refrigerant under differing conditions.

Alternately stated, in the counter flow configuration, the air leaving the coil can reach a temperature that is same or close to the entering fluid temperature. This is clear indication that optimum heat exchange has occurred with minimum amount of air movement. Which is minimum amount of energy was needed for the most heat exchange.