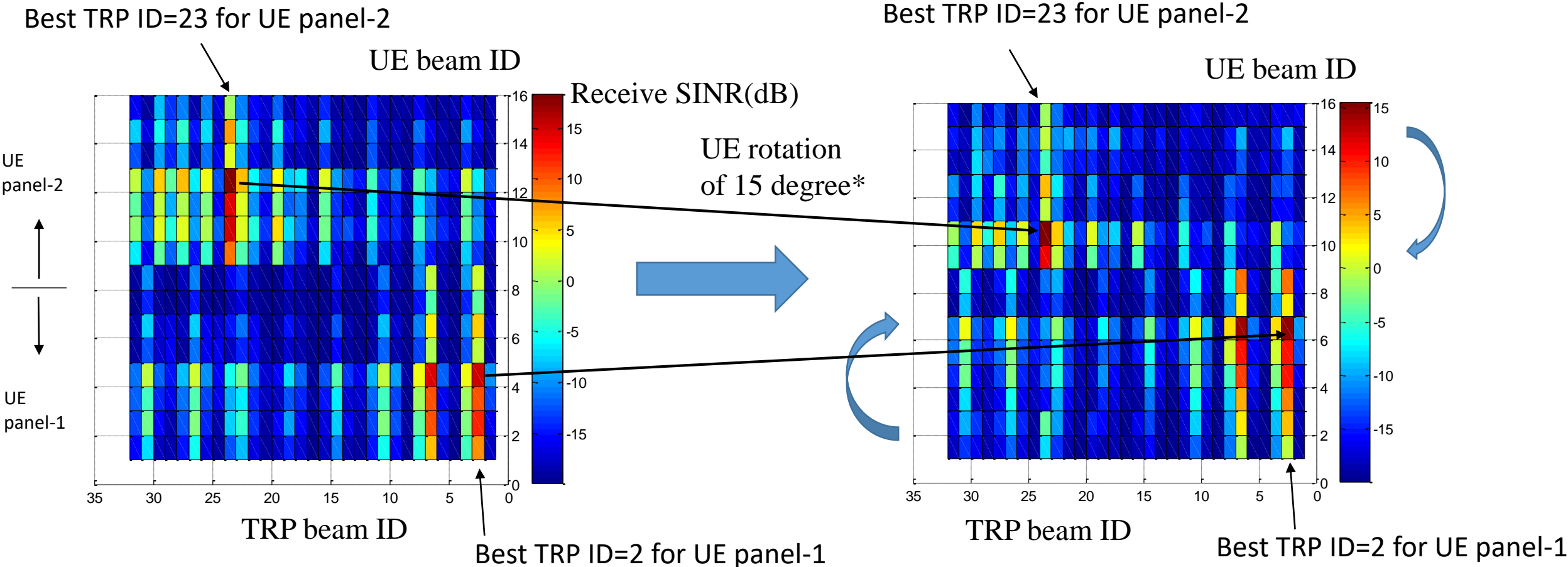


Example for UE rotates but not moves



Note*: At 50 rpm, UE rotation of 15 degree under 50 ms latency
 UE panel-1: UE beam ID 1~8
 UE panel-2: UE beam ID 9~16

Best TRP beam changes due to UE rotation and latency

- Observation-1:

- From TRP perspective, its TX beam almost remains;
- From UE perspective, its Rx beam needs to compensate the rotation accordingly.

	Rx beam difference	Tx beam difference	Mean delta_RSRP	Mean Delta_RSRP only considering the case of TRP beam changes
Rotation of 15 degree	28.95%	7.89%	0.0258 dB	0.4894 dB

Only 0.0258 dB difference for mean RSRP

Performance loss of using non-best TRP beam ID due to UE rotation and latency

- Observation-2: At 50 rpm, we have UE rotation of 15 degree under 50 ms latency
 - It happens with very low probability (7.89%) that TRP Tx beam changes due to that UE rotates but not moves.
 - Key point: Even if it occurs, the performance degradation can be ignored (mean RSRP difference is about 0.0258).
 - In technical, it is up to gNB and UE implementation for beam-forming gain gap between neighboring beams.