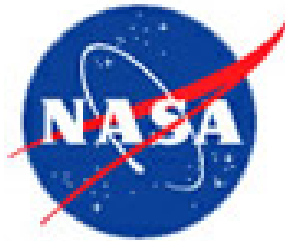


Plots of Departure Reroute Maneuver Candidates After Takeoff



**R. A. Paielli
NASA Ames Research Center**

The following plots show departure reroute maneuver candidates for conflict resolution. Unlike the previous plots, in these plots the maneuver is initiated after takeoff. The original route is shown as a dashed blue line, and the reroute candidates are shown as solid gray lines. The original route in this example has an extra waypoint added to make the route longer so that the effect of the reroutes will be clearer.

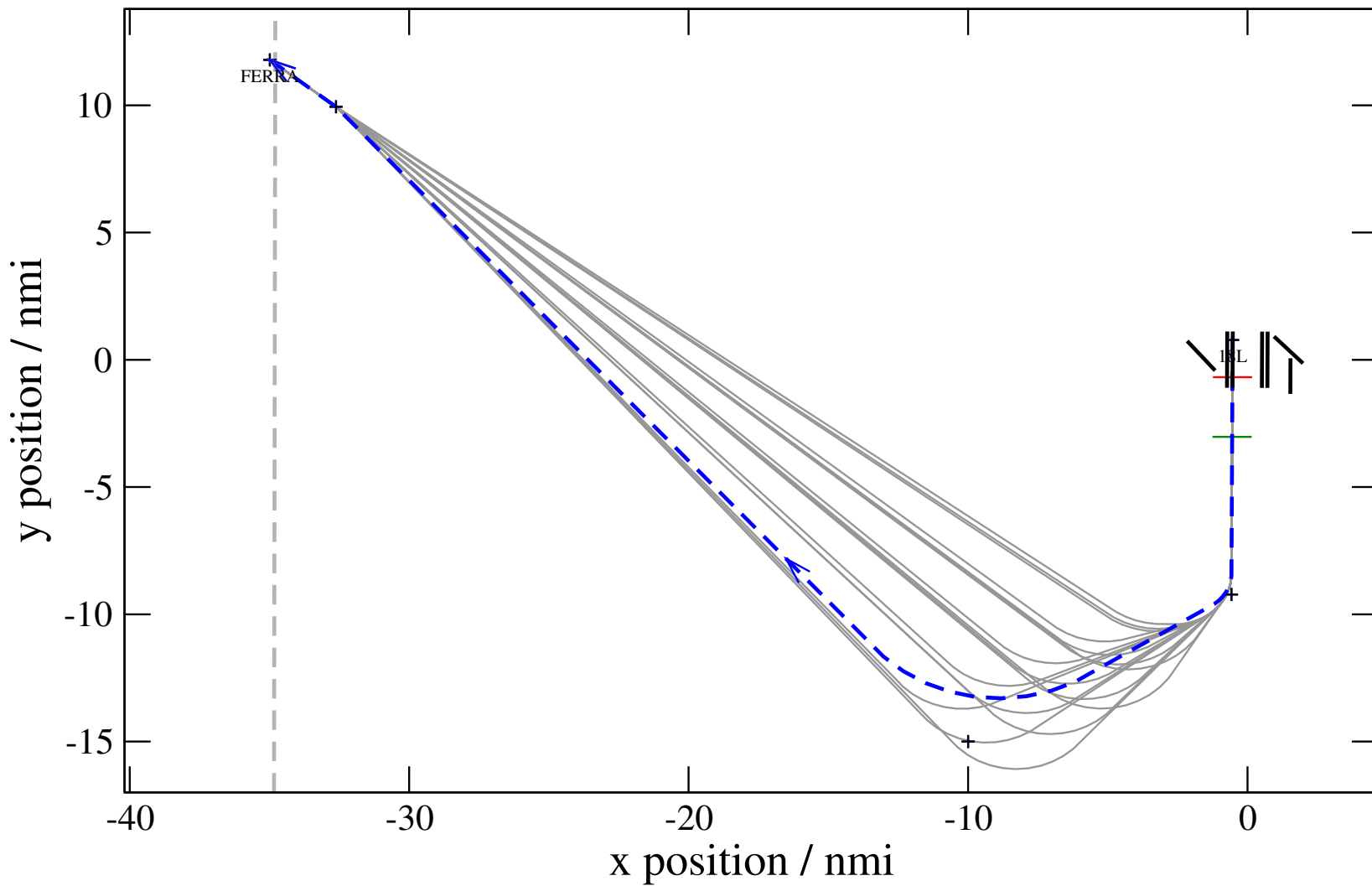
The red + symbol near the start of the route in the first plot represents the position at the time of maneuver initiation. This position is advanced by a small time increment in each subsequent plot to illustrate the effect of initiating a reroute at various times. The green + symbol one minute ahead of the red + symbol represents the time at which the route is allowed to deviate from the original route. This maneuver lead time allows time for the pilot to execute (or approve) the maneuver. In addition to that lead time, maneuvers are not allowed to start until after the first turn after takeoff (that is why the reroutes are the same in the first few plots).

As explained in an earlier set of plots, the candidate routes are generated by permuting each of three parameters through a set of values. The resulting delay is computed for each candidate, and the one with the least estimated delay is selected from those that resolve the conflict, if any do.

[generated with plot/RerouteDepAtTimePlots.scala]

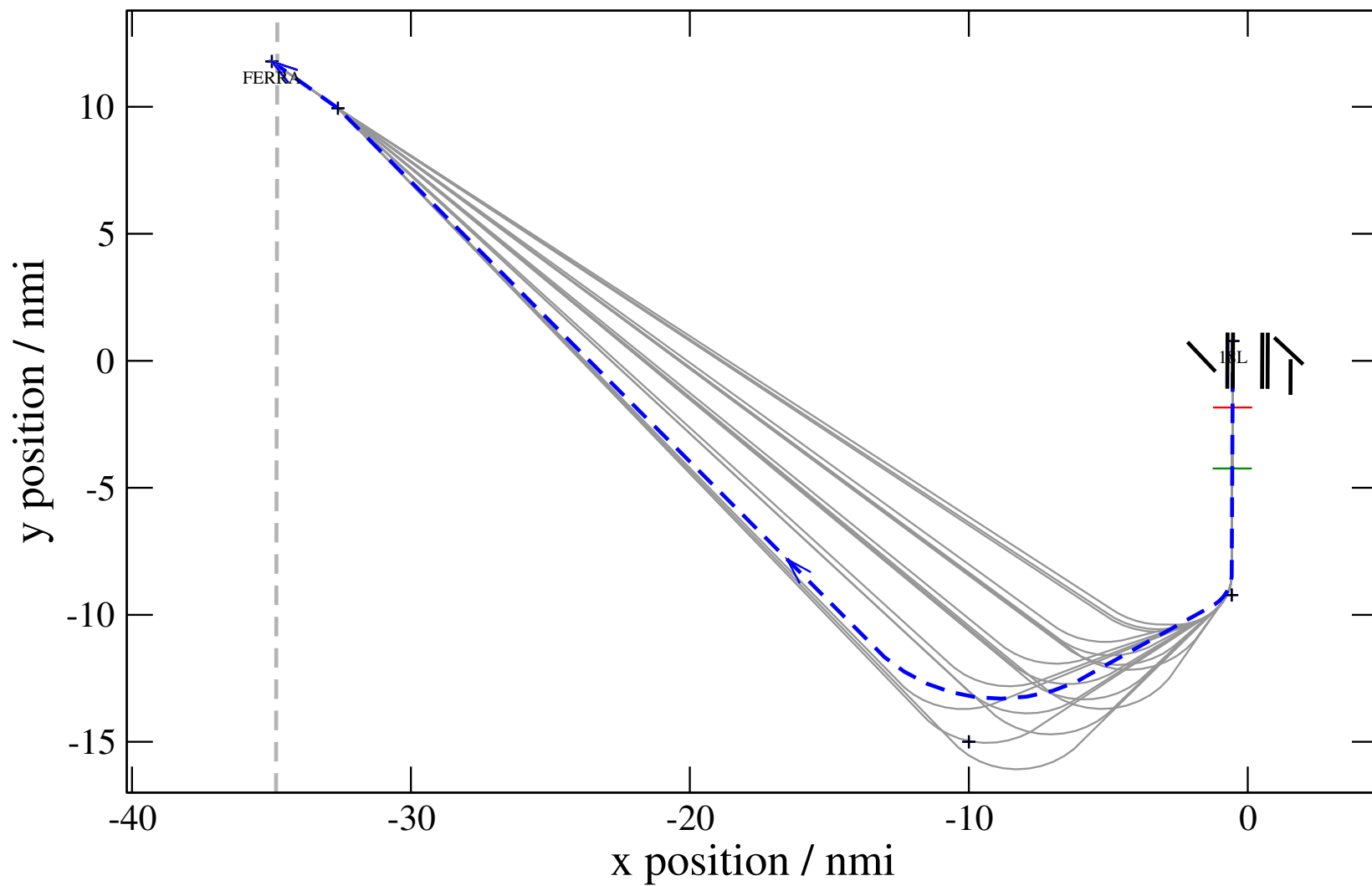
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 17 candidates



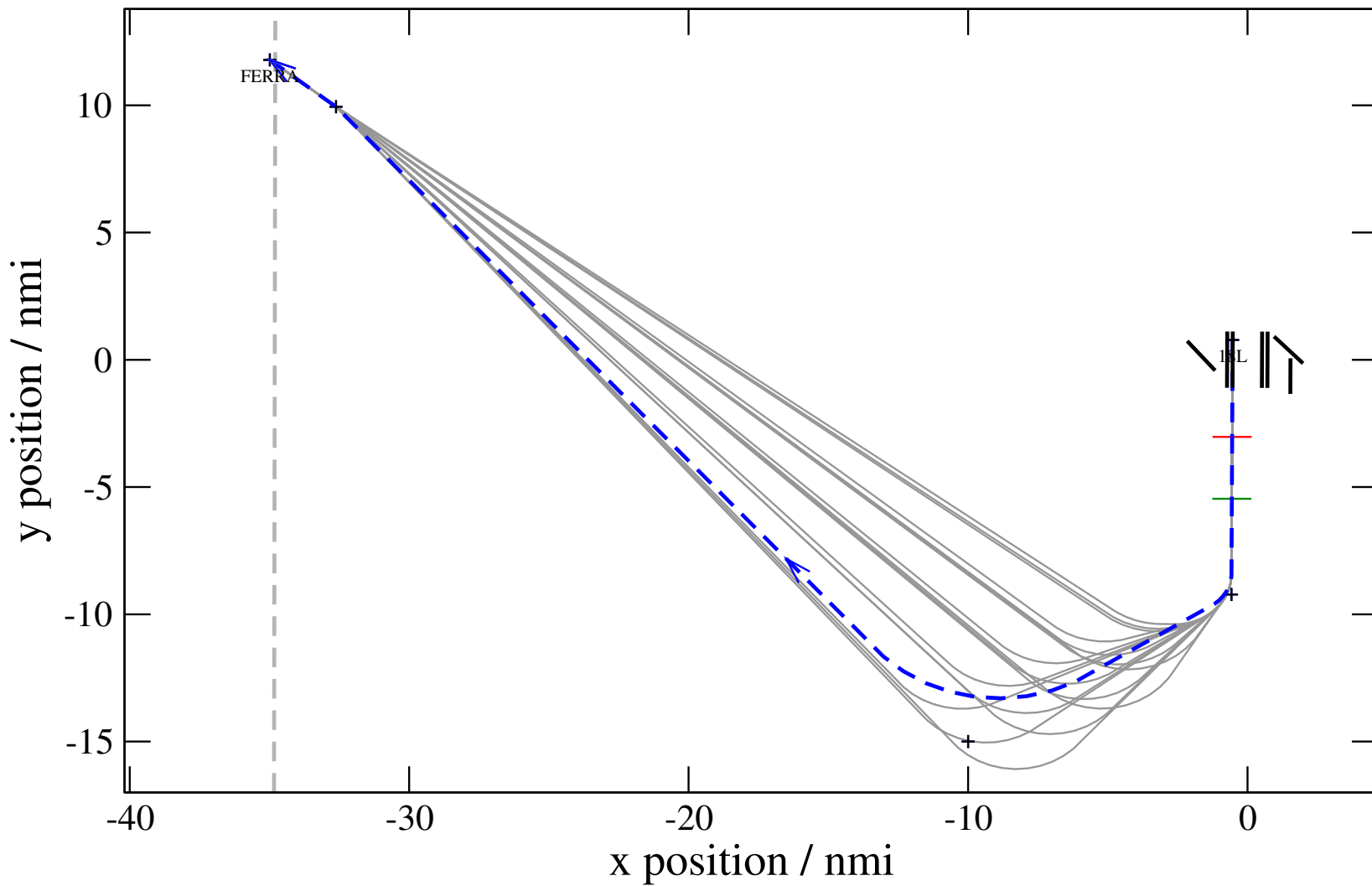
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 17 candidates



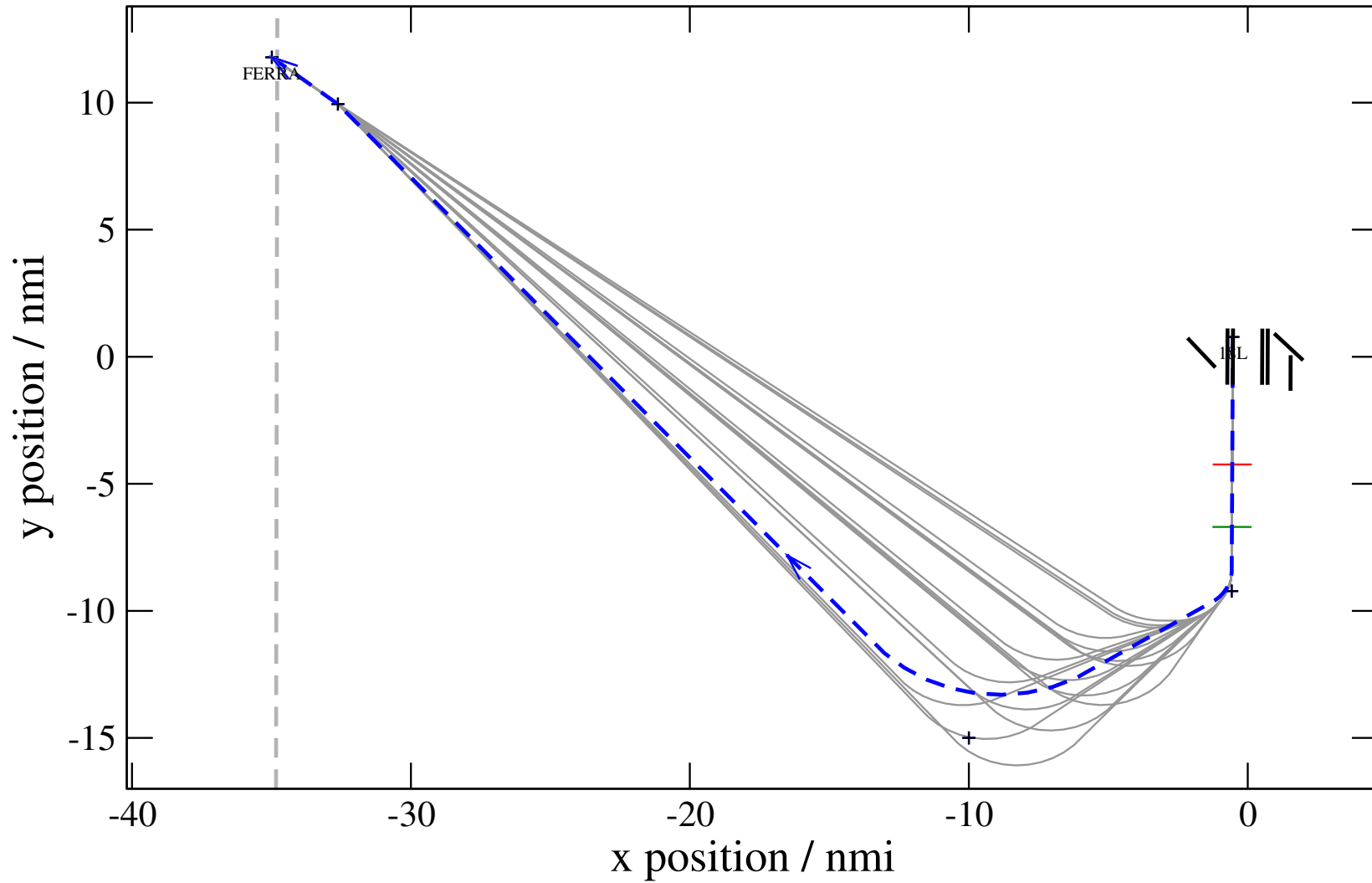
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 17 candidates



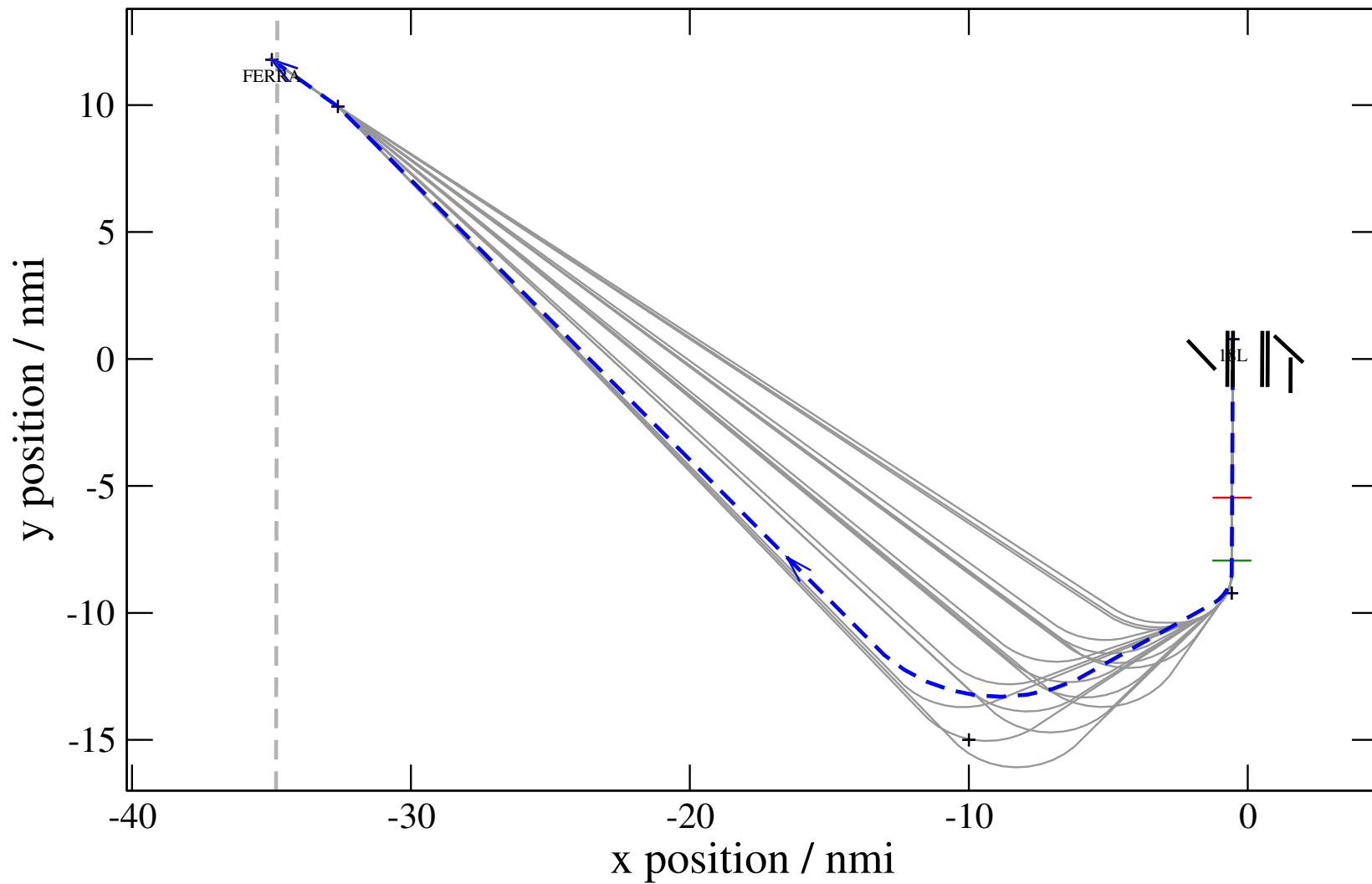
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 17 candidates



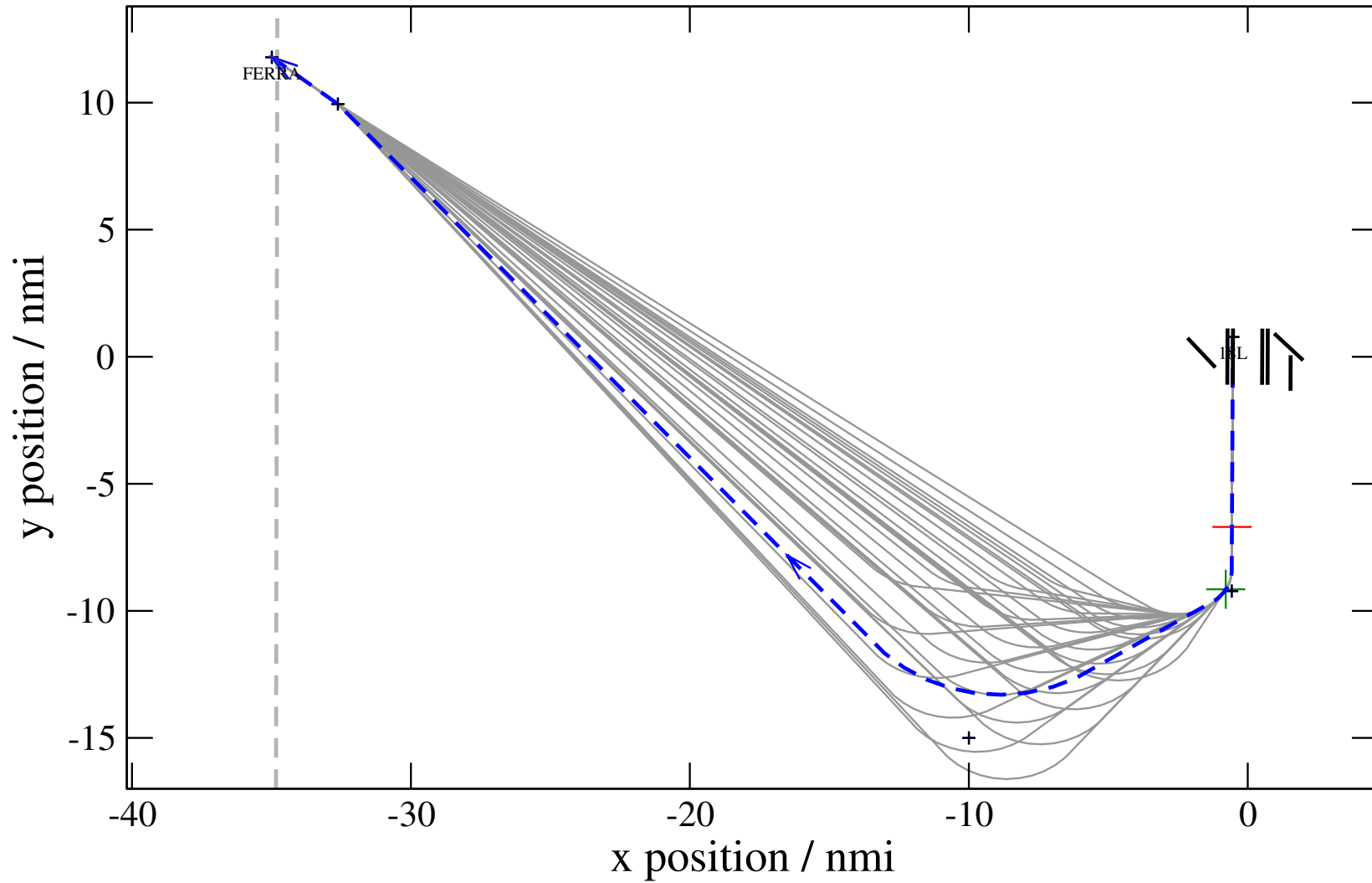
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 17 candidates



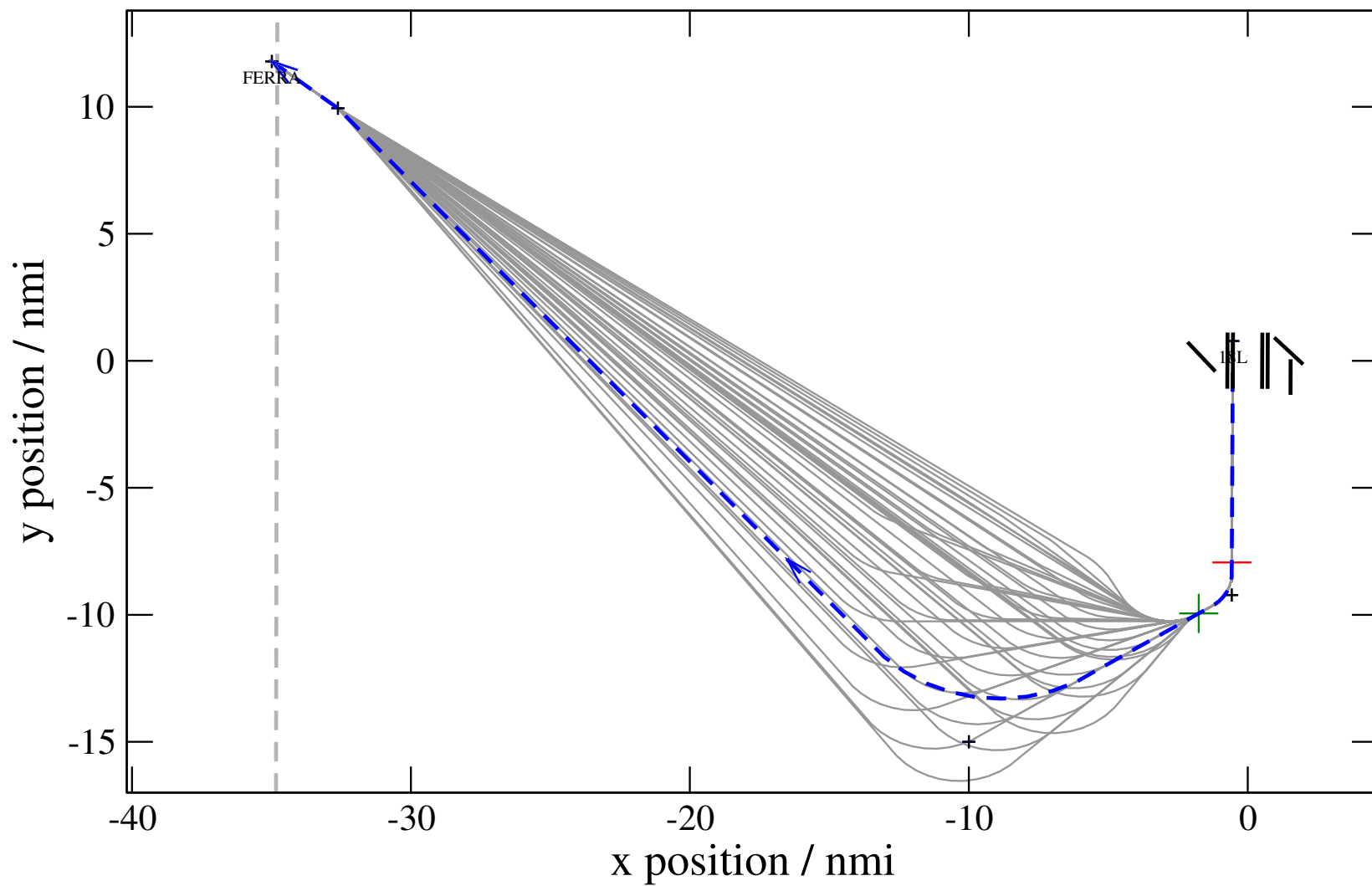
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 31 candidates



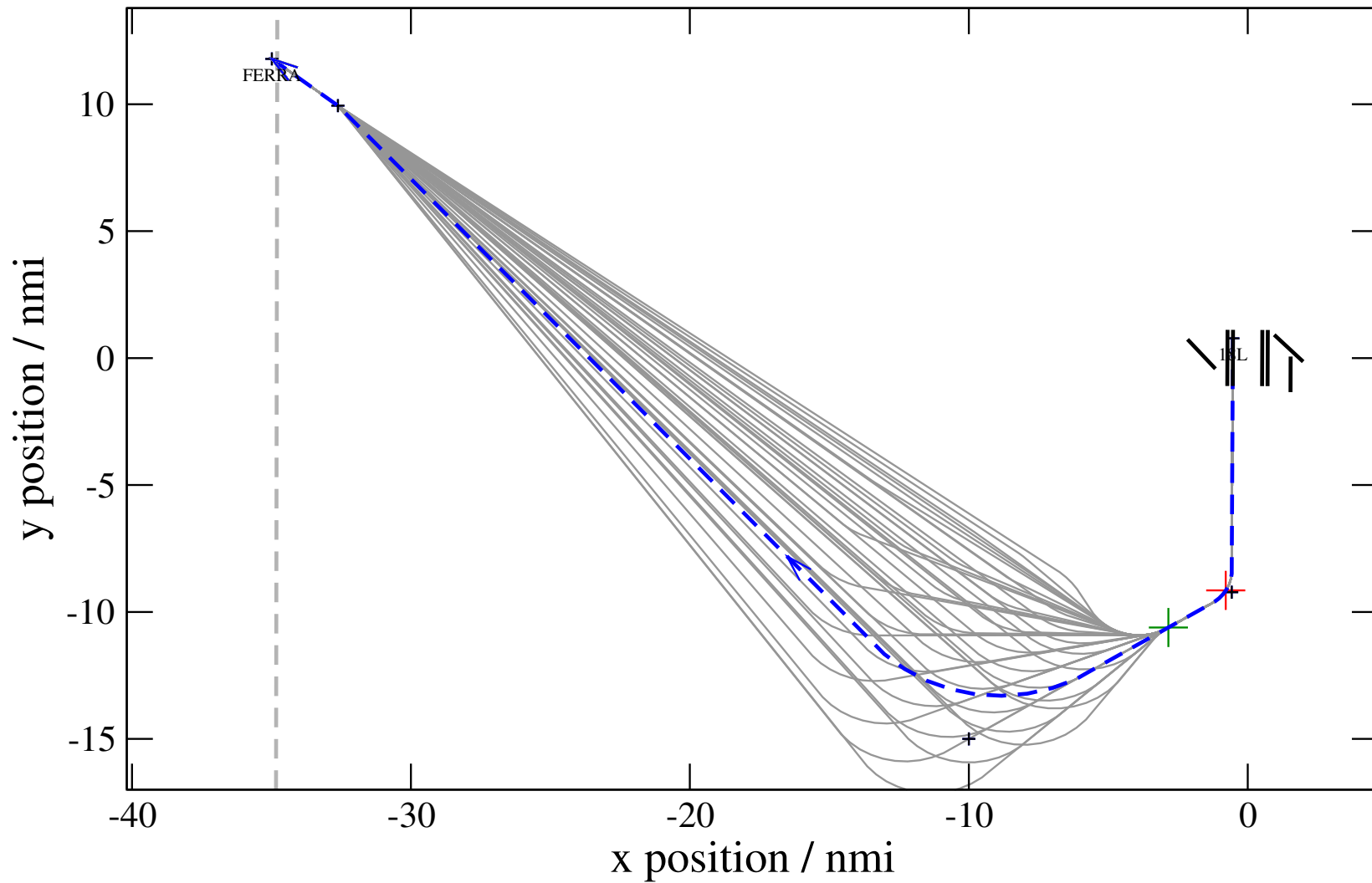
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 43 candidates



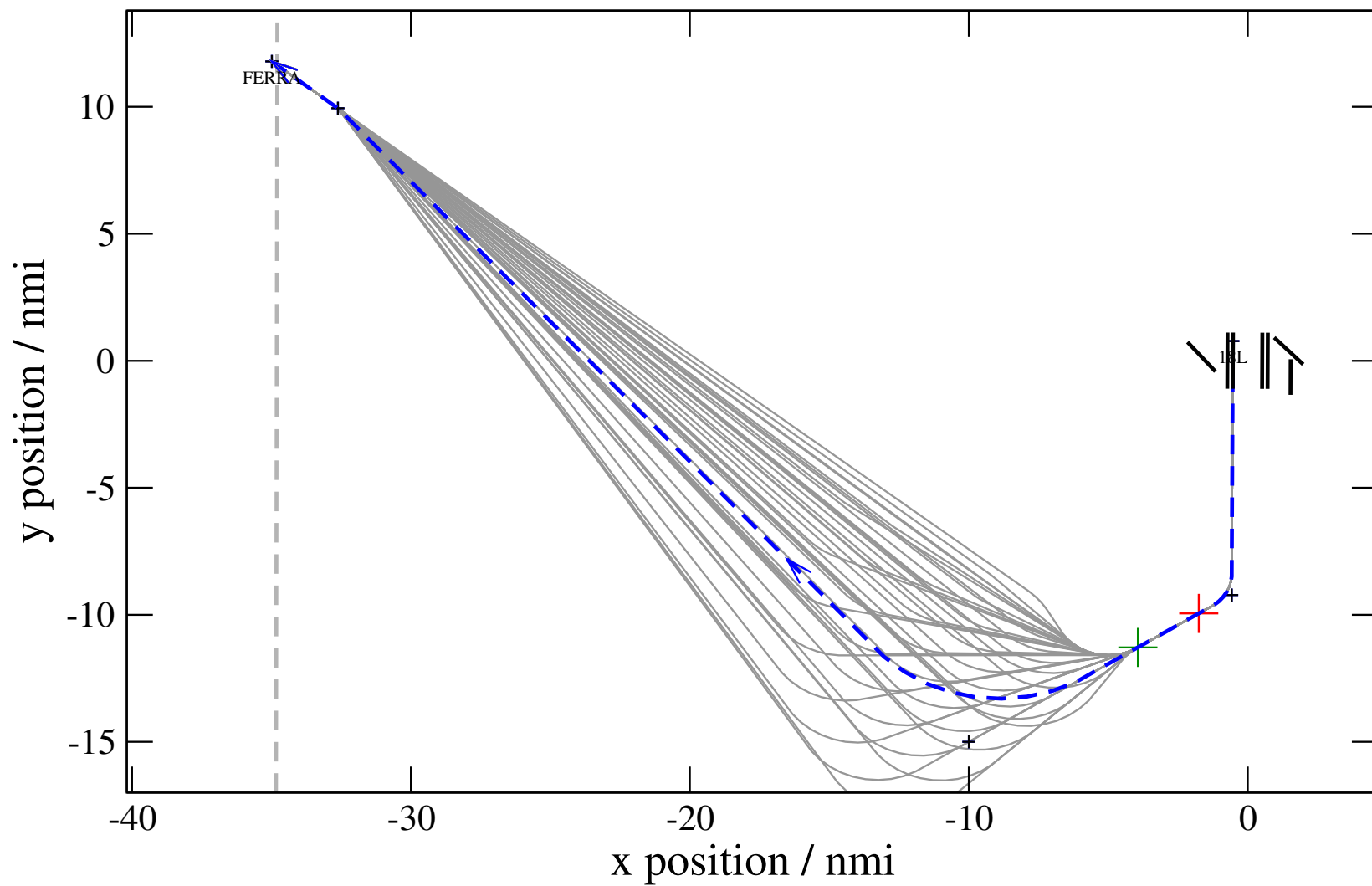
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 41 candidates



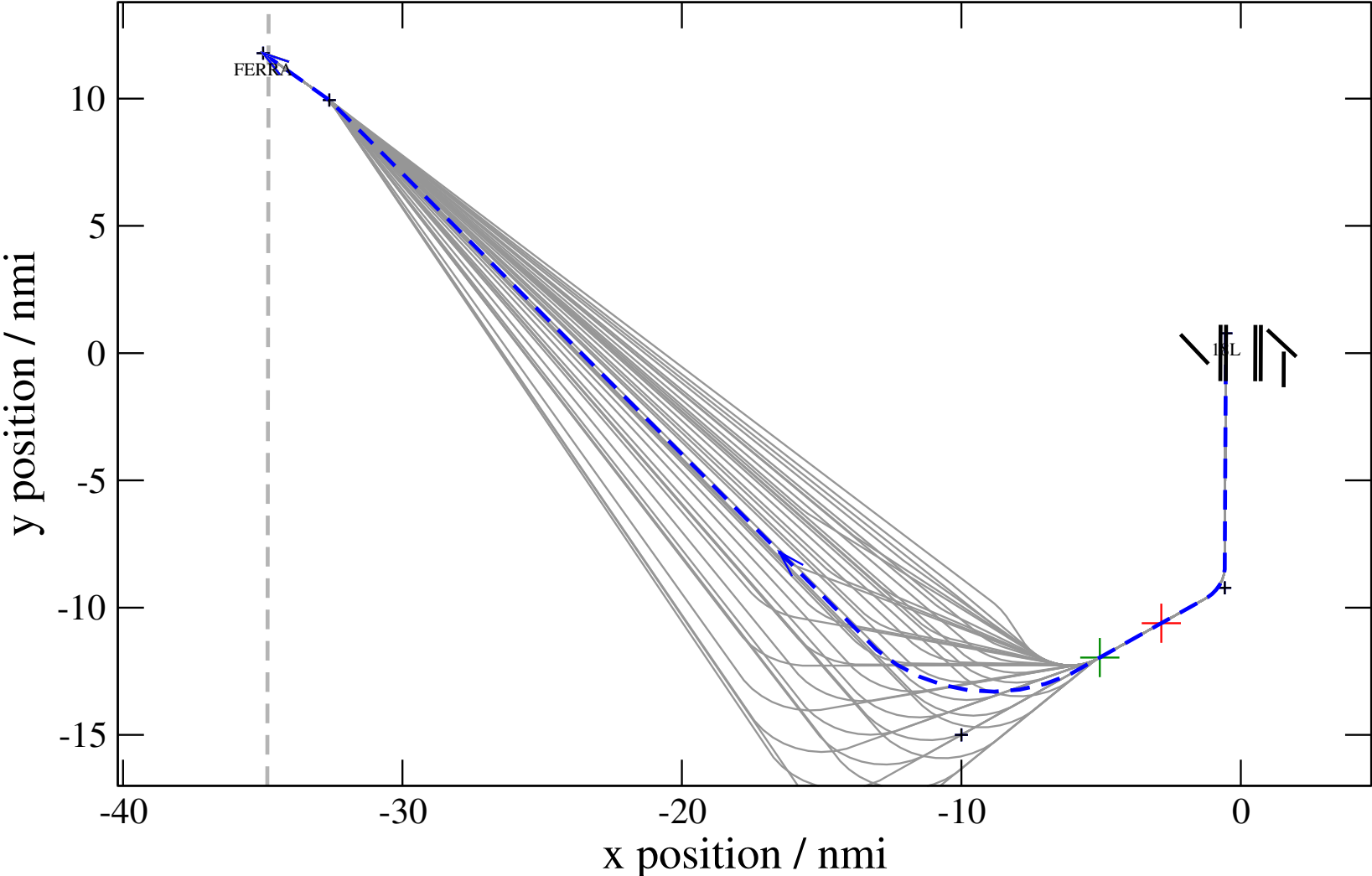
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 40 candidates



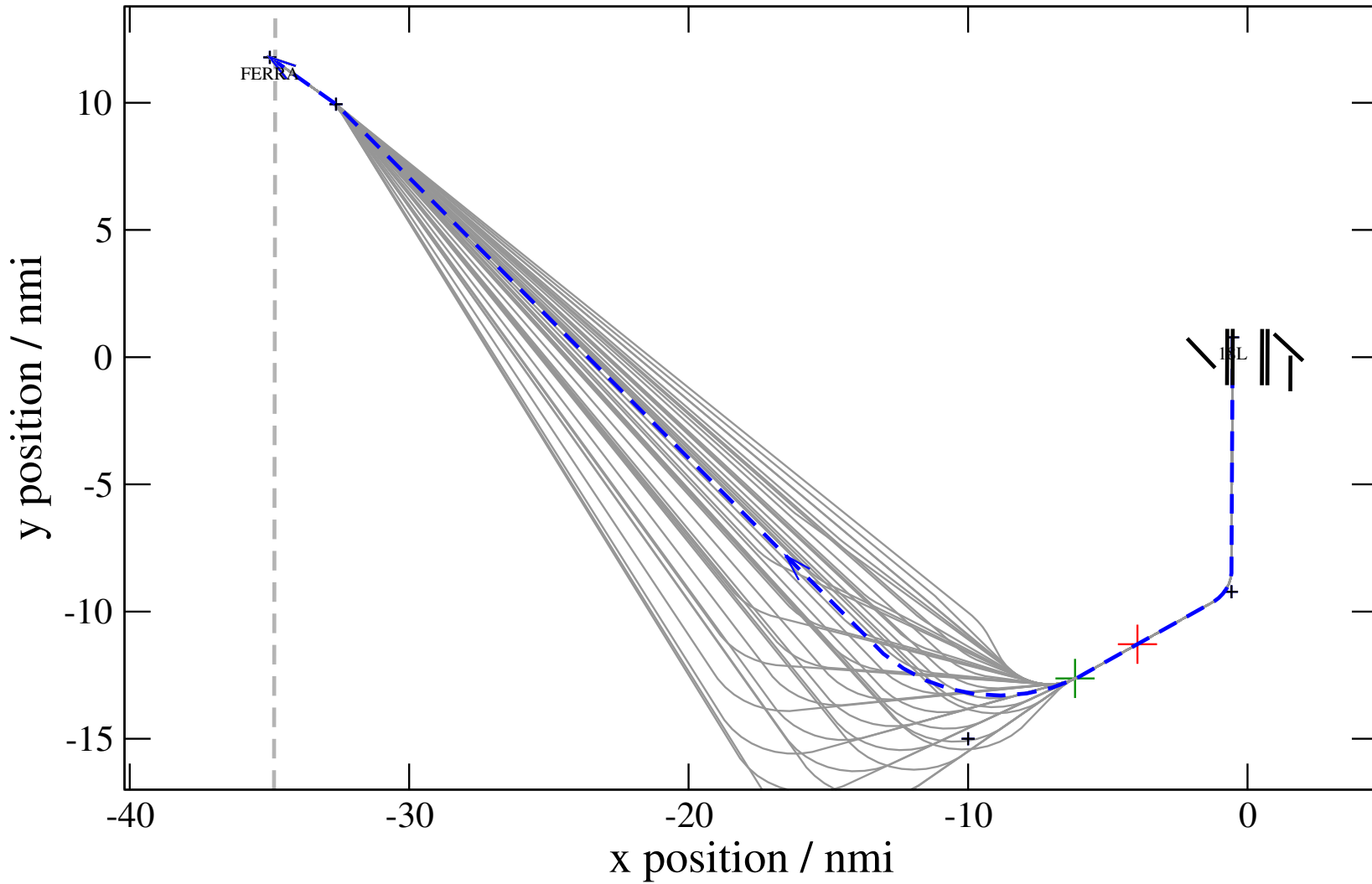
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 39 candidates



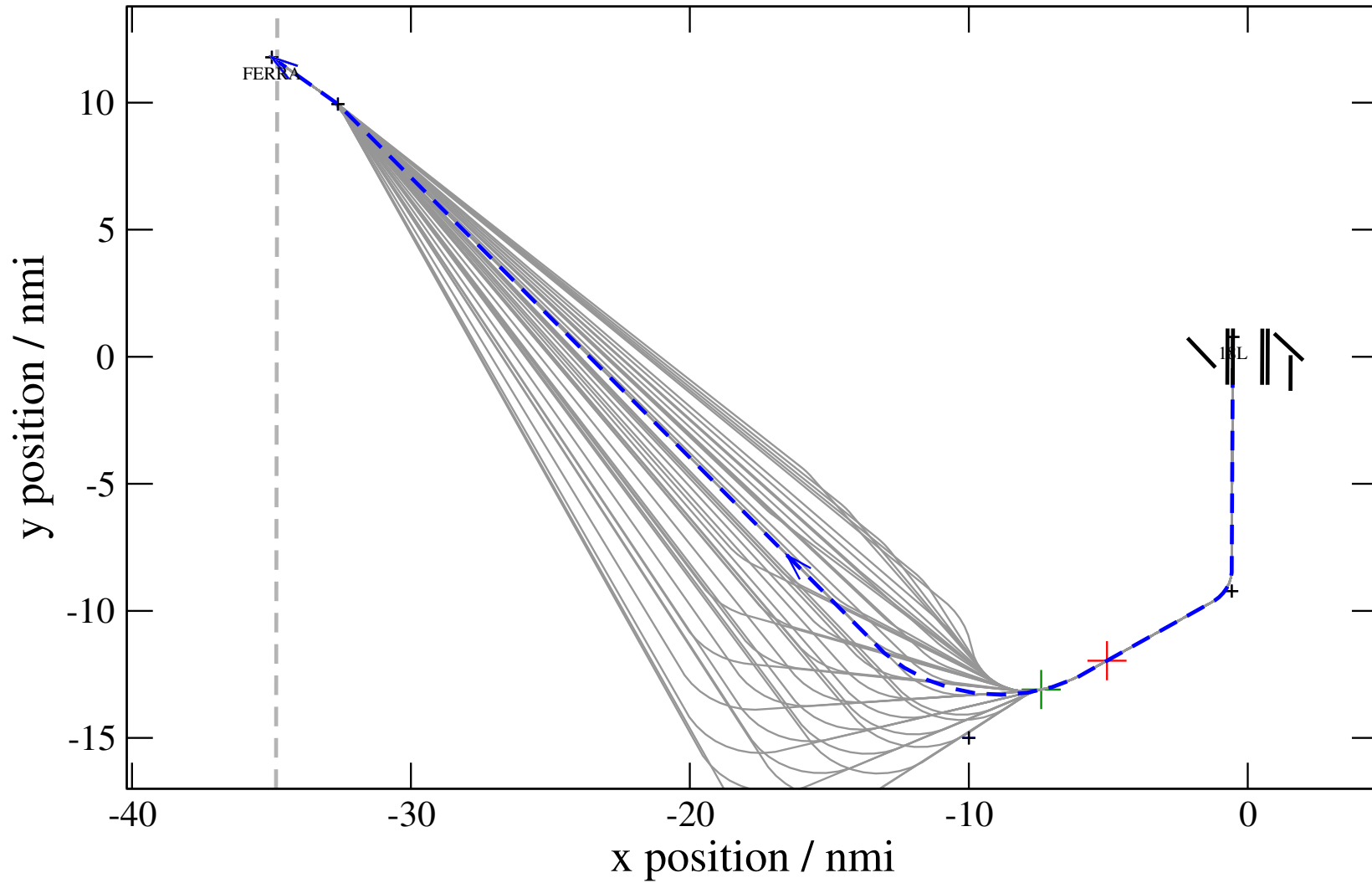
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 41 candidates



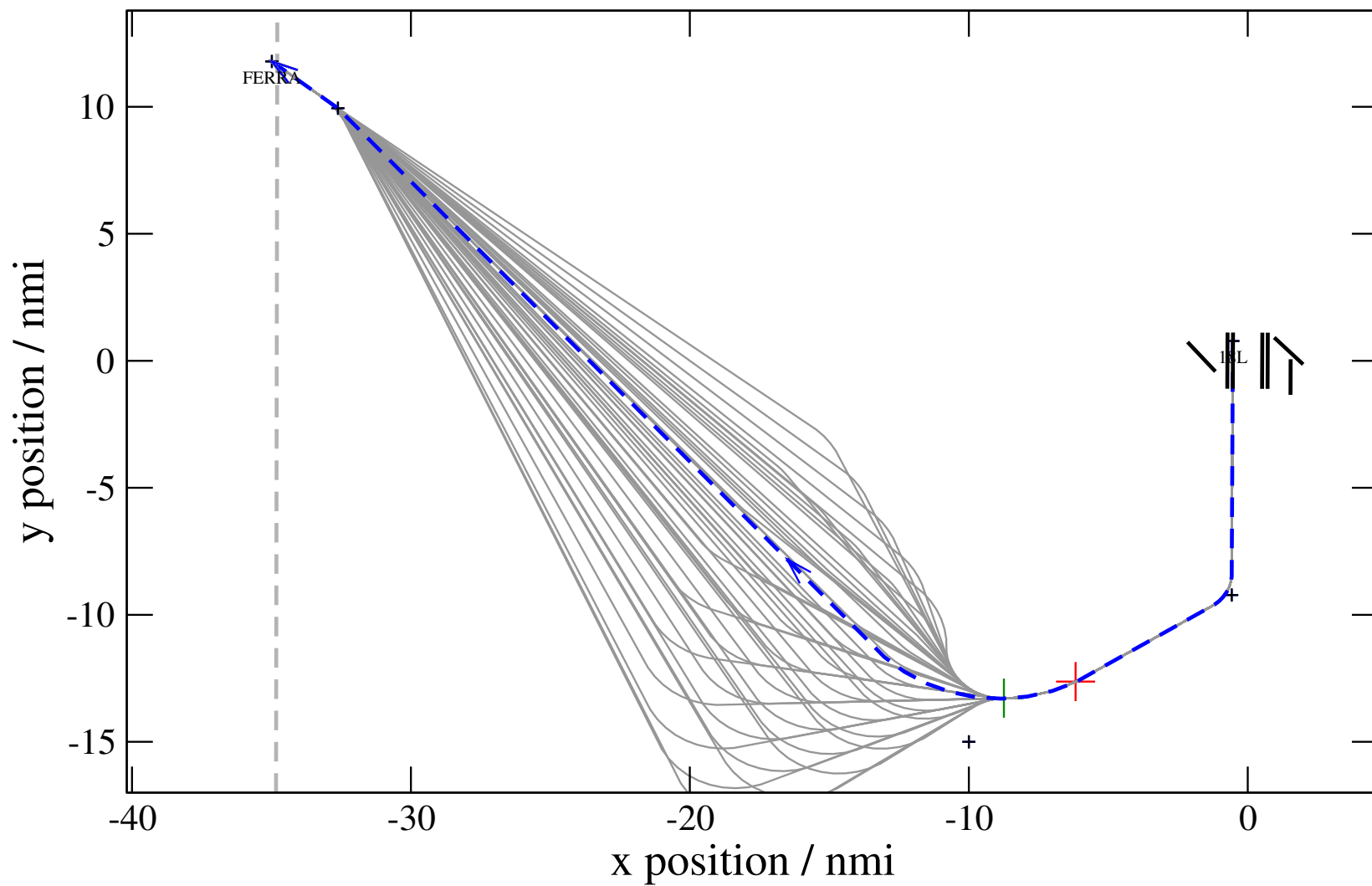
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 44 candidates



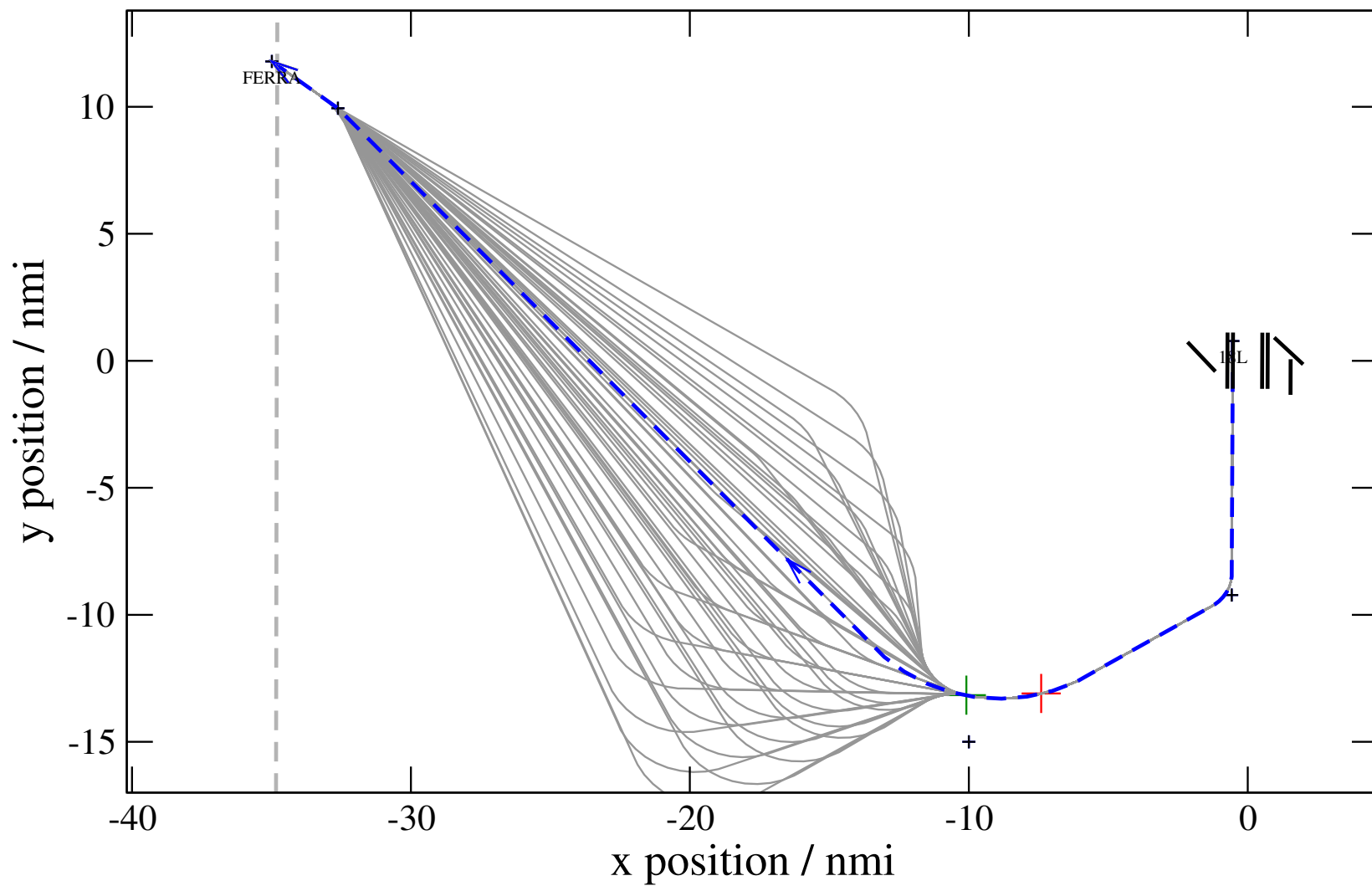
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 49 candidates



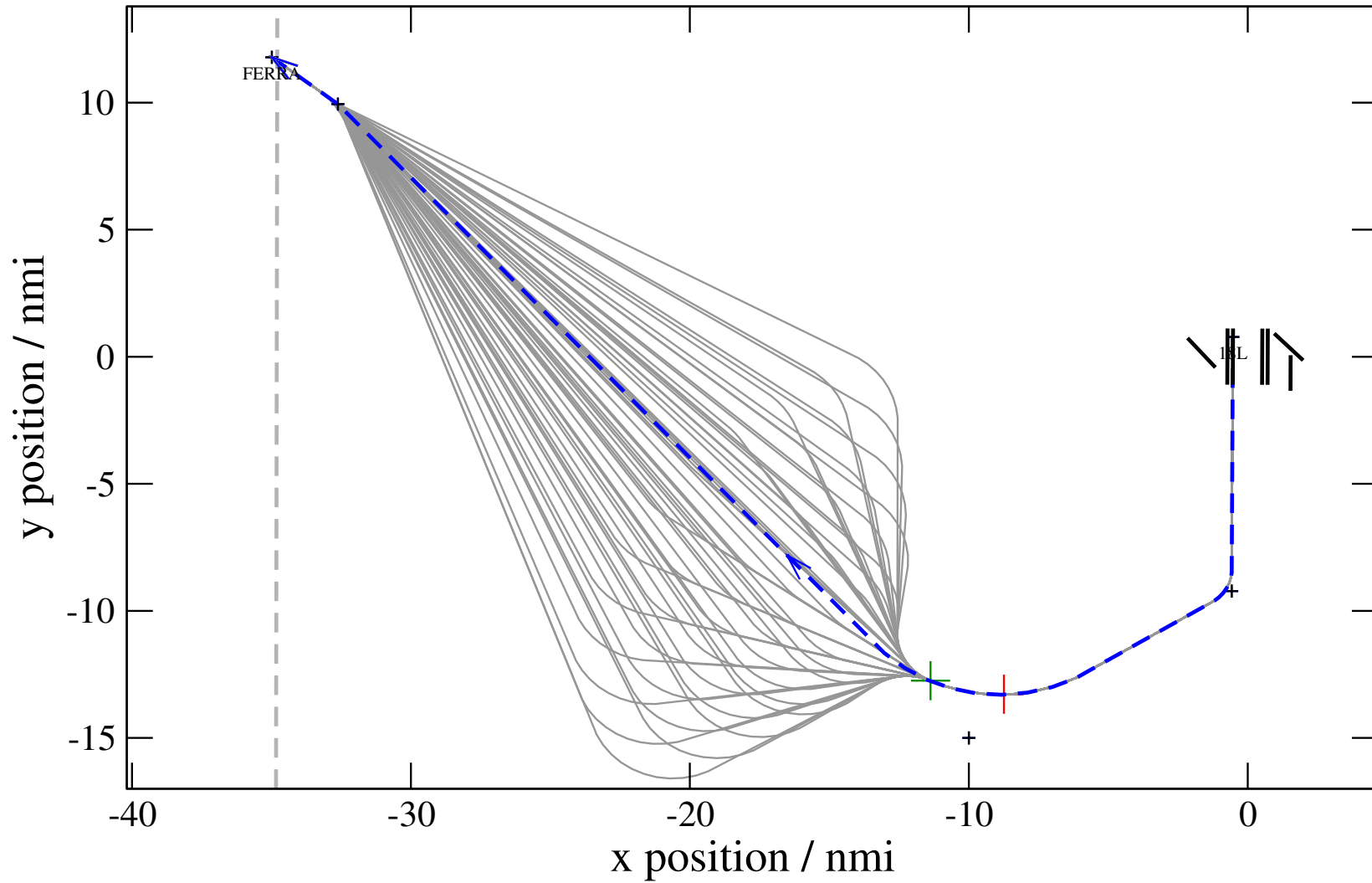
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 52 candidates



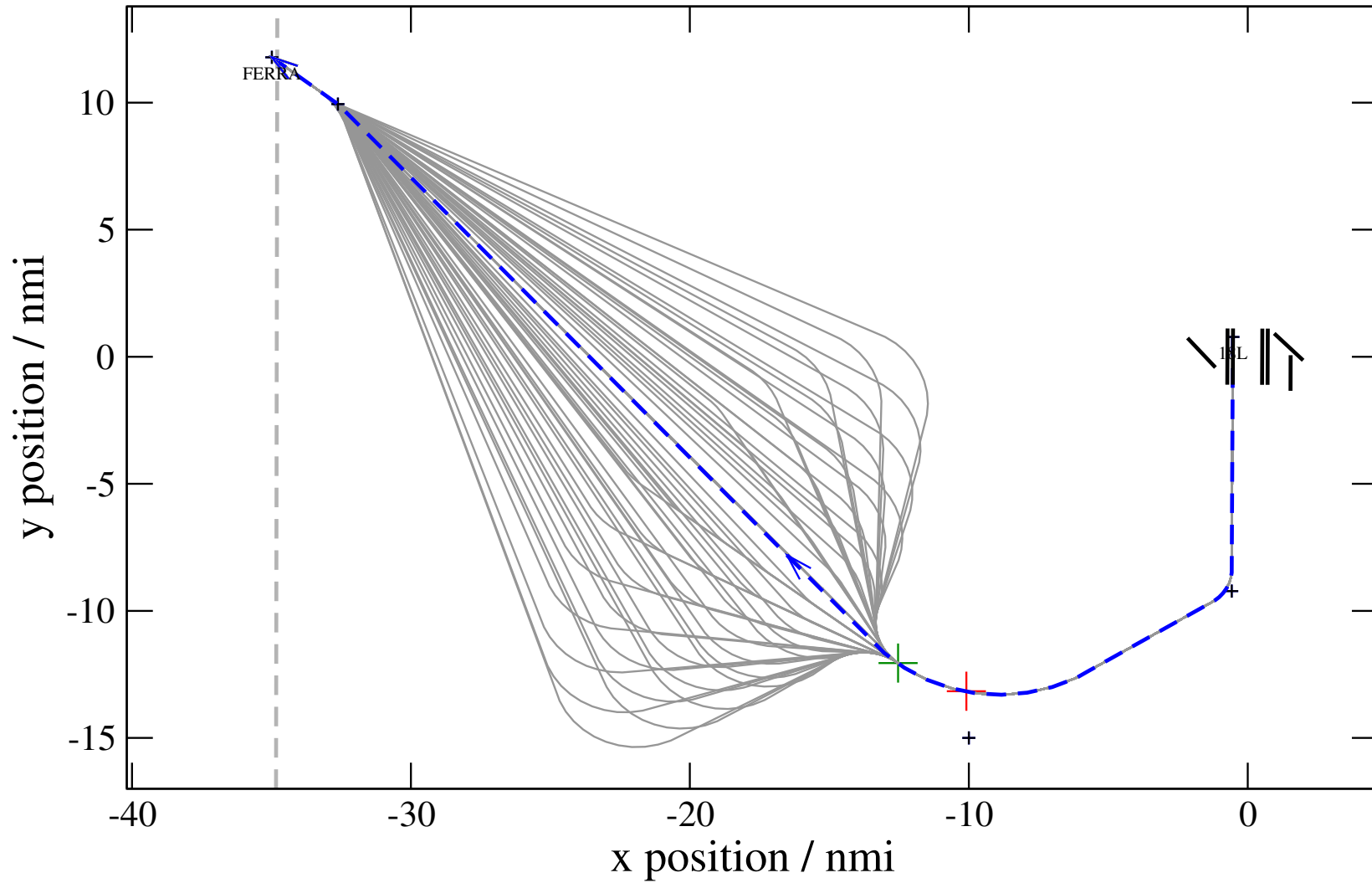
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 56 candidates



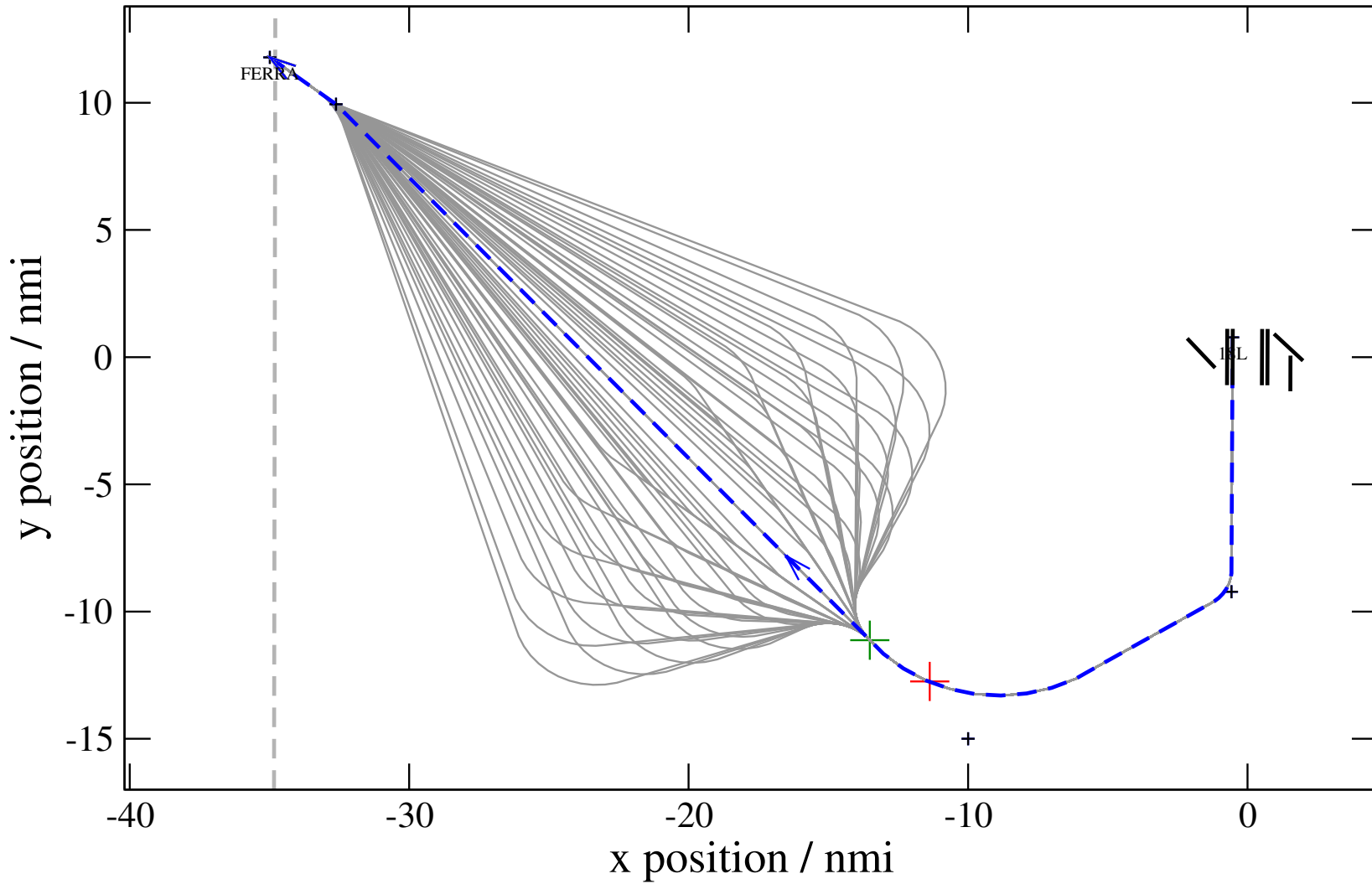
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



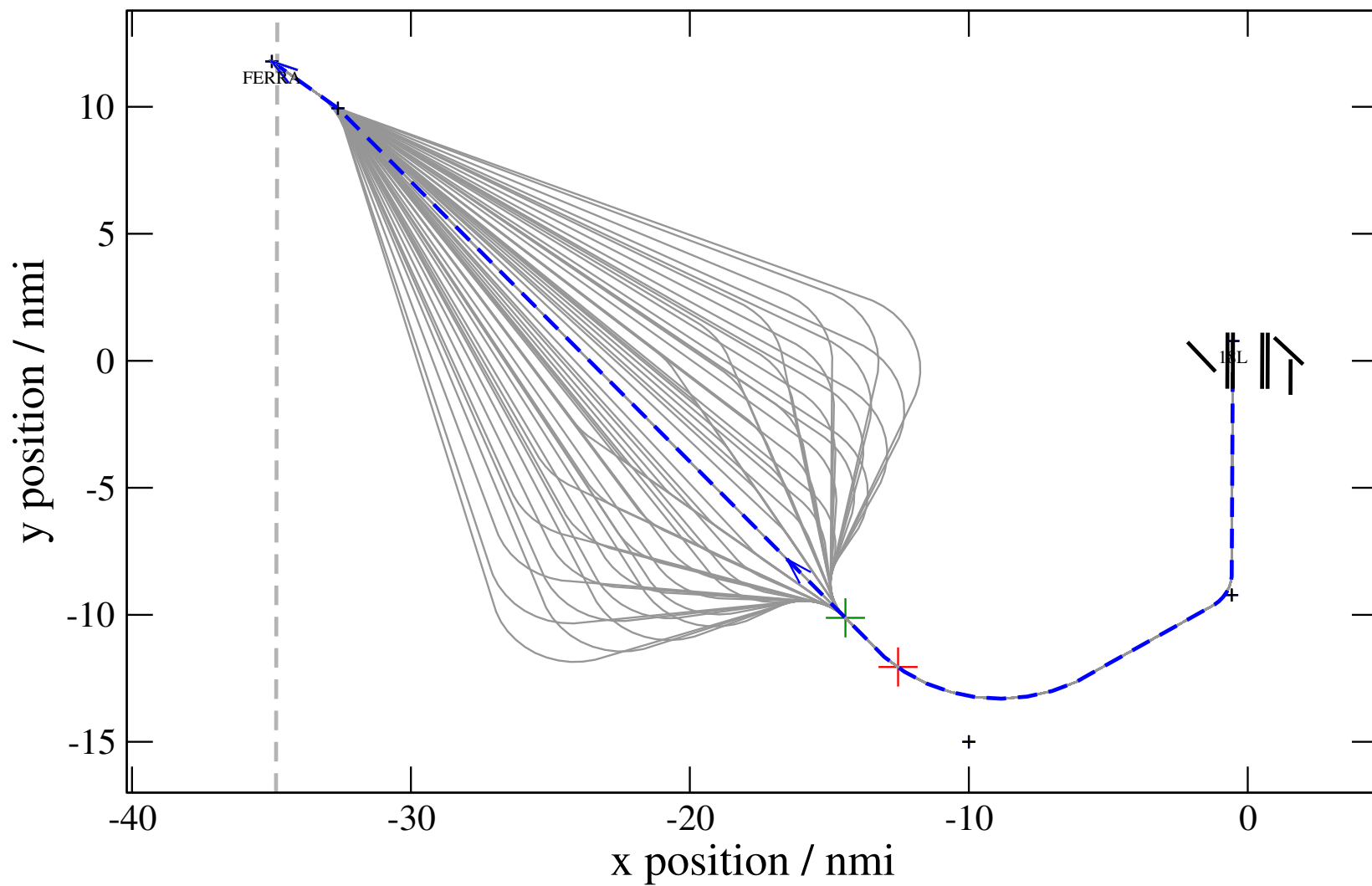
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



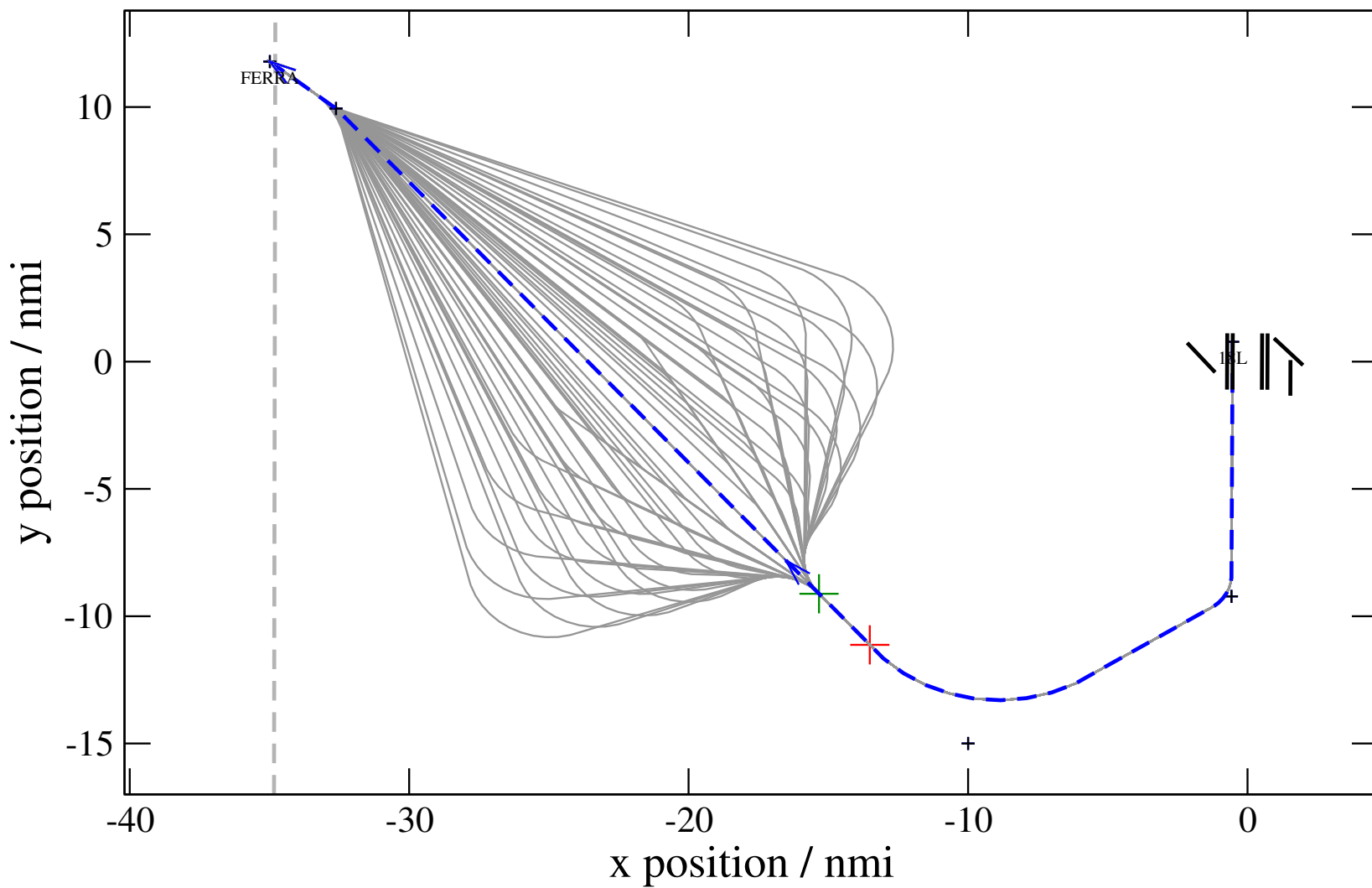
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



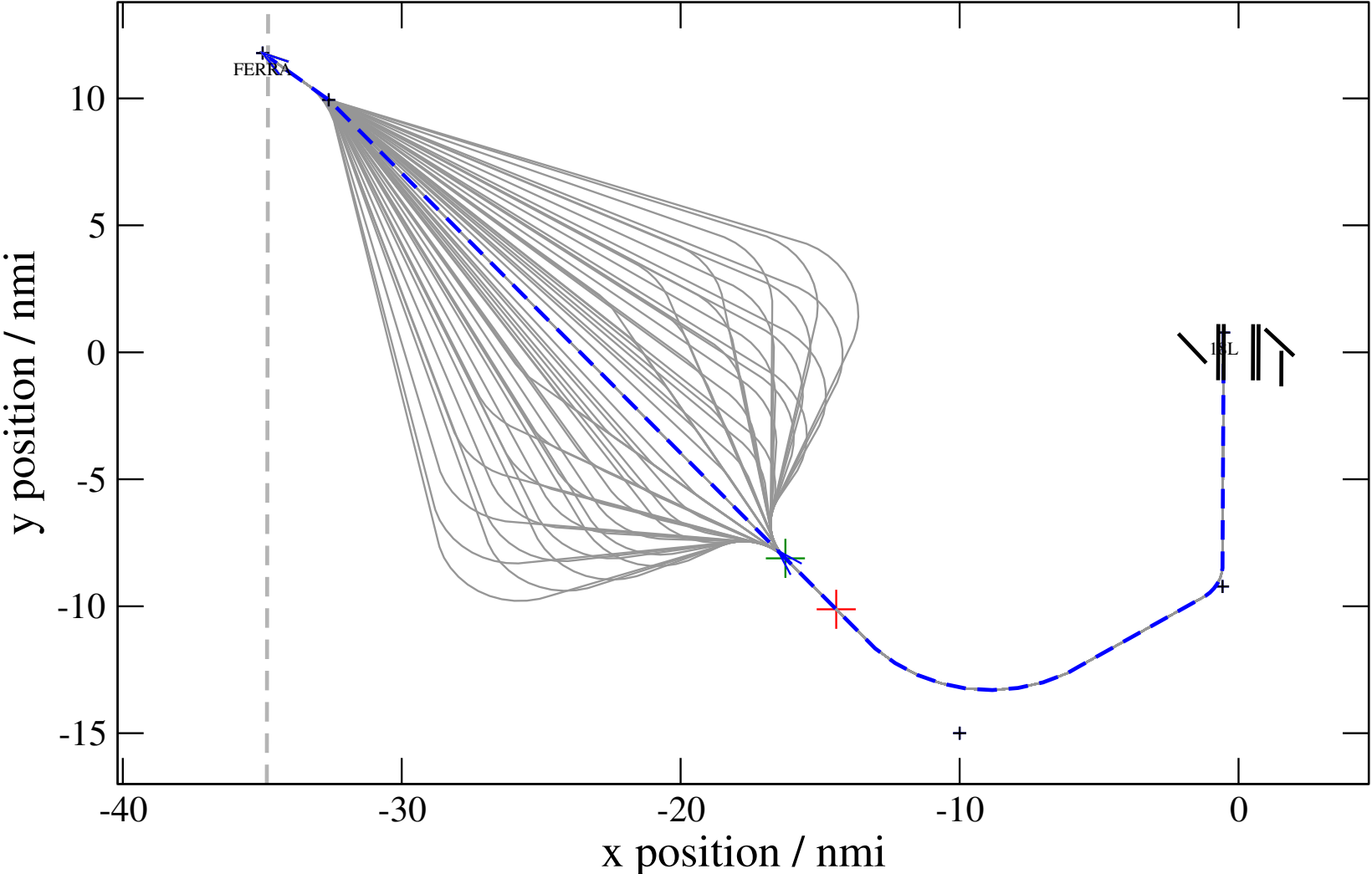
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



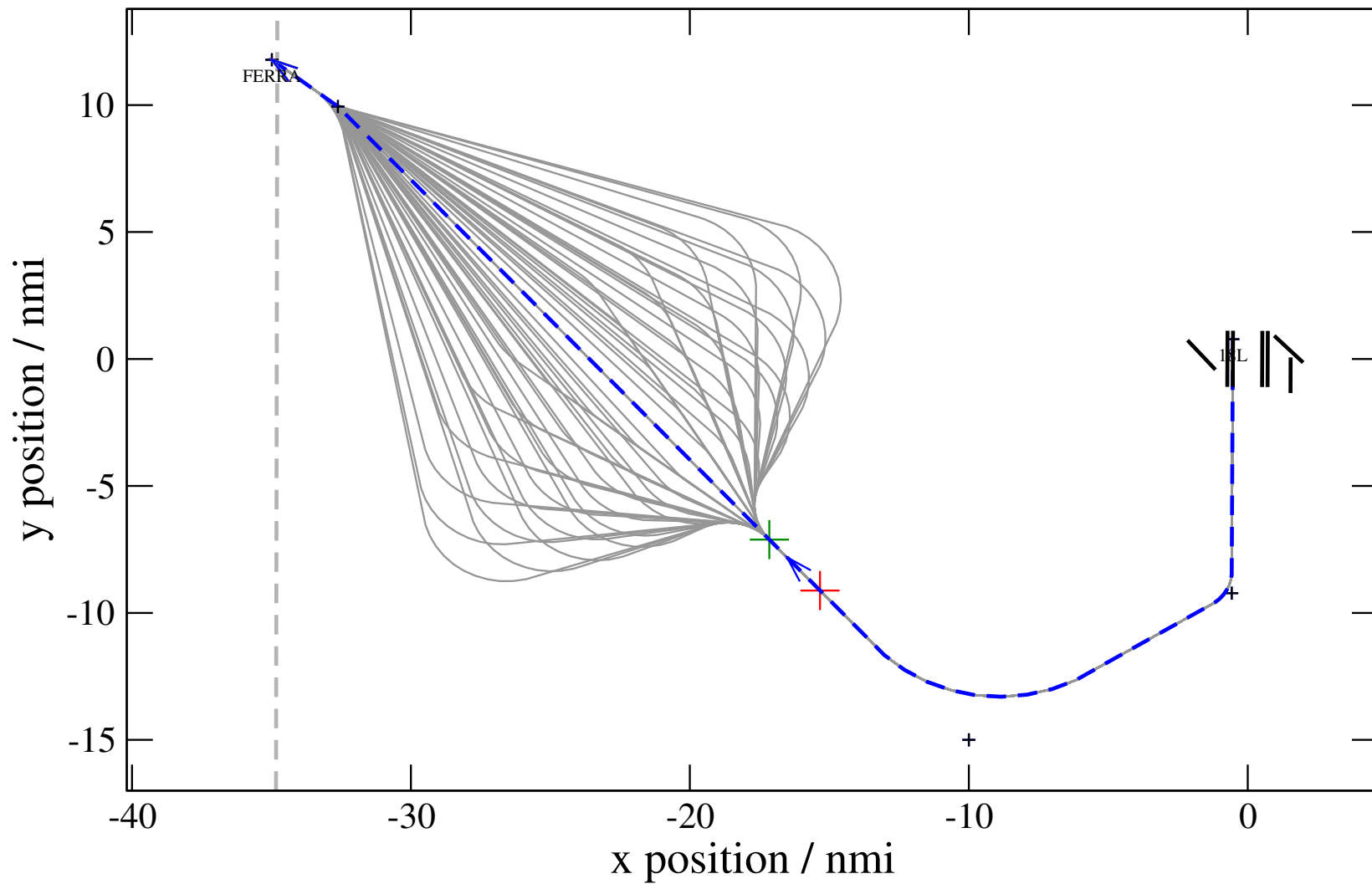
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



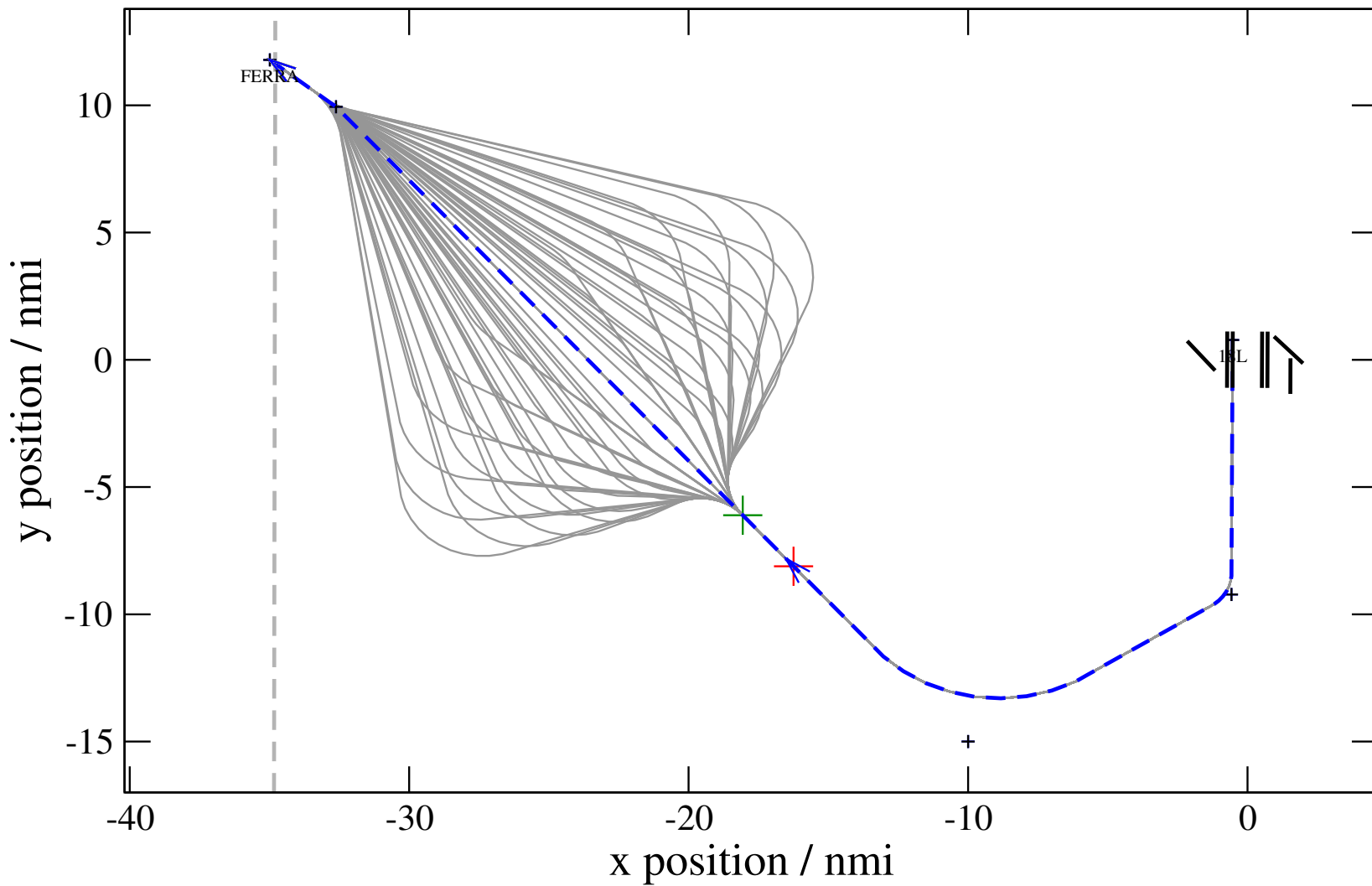
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



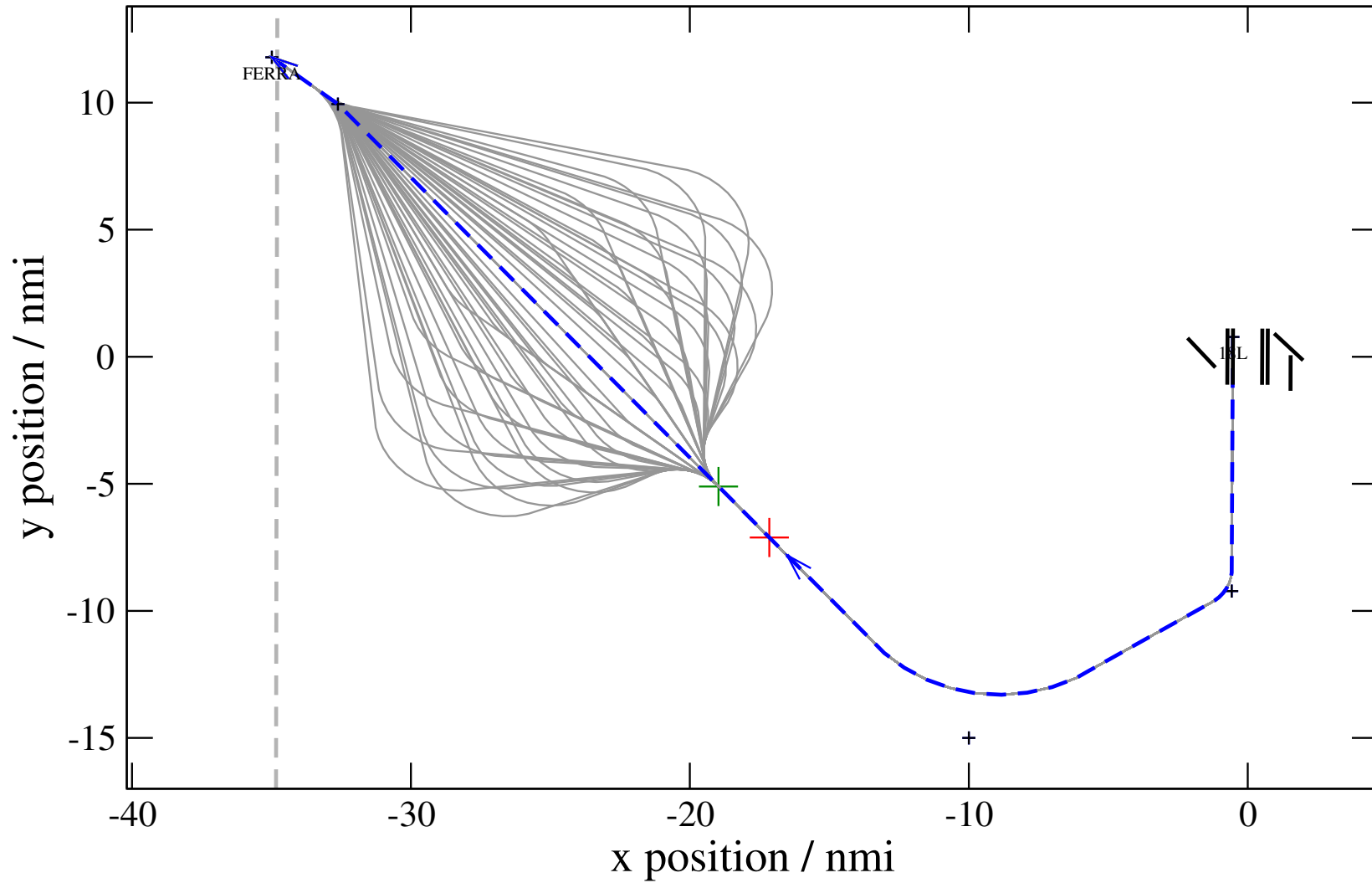
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 61 candidates



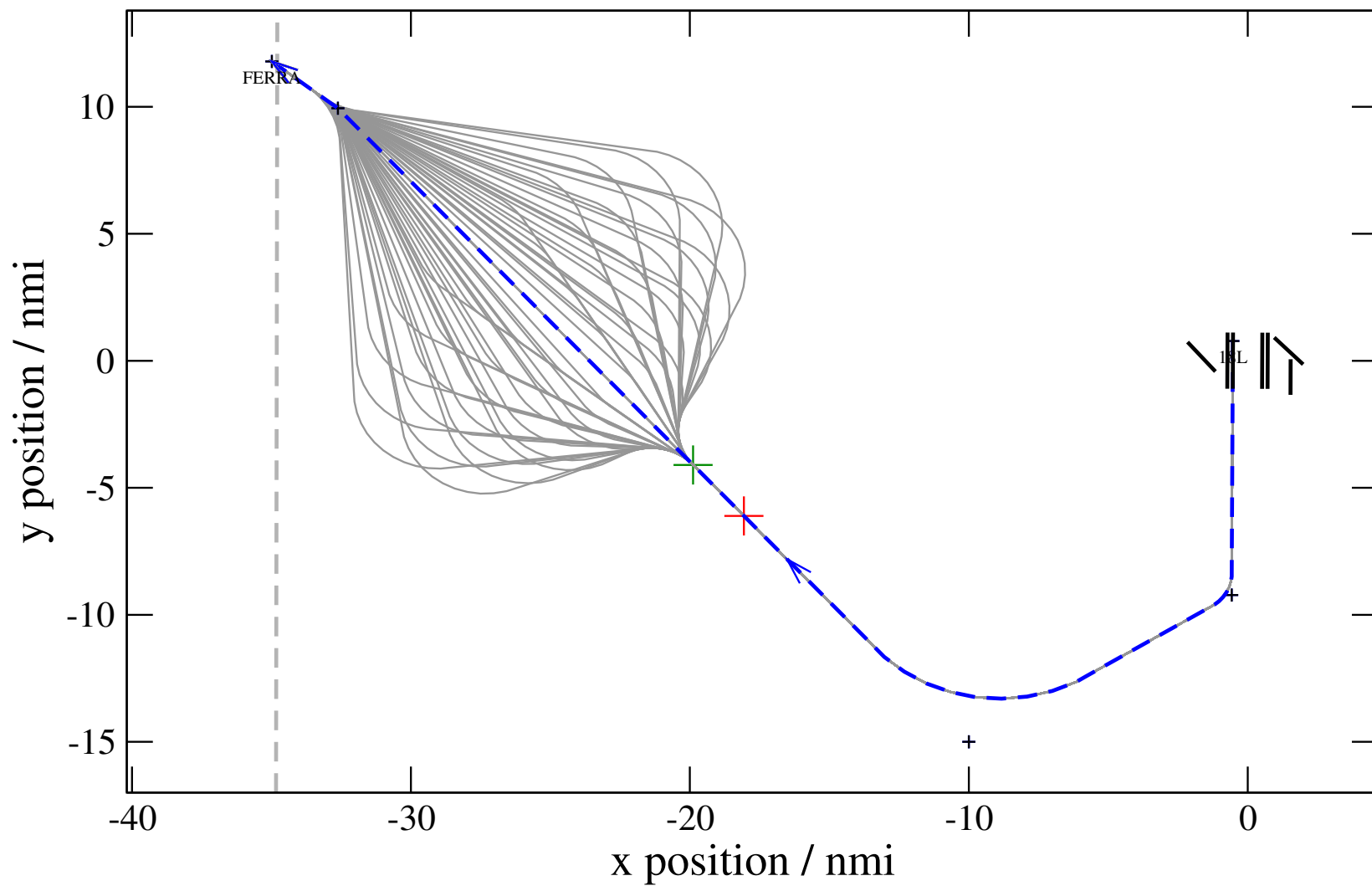
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 59 candidates



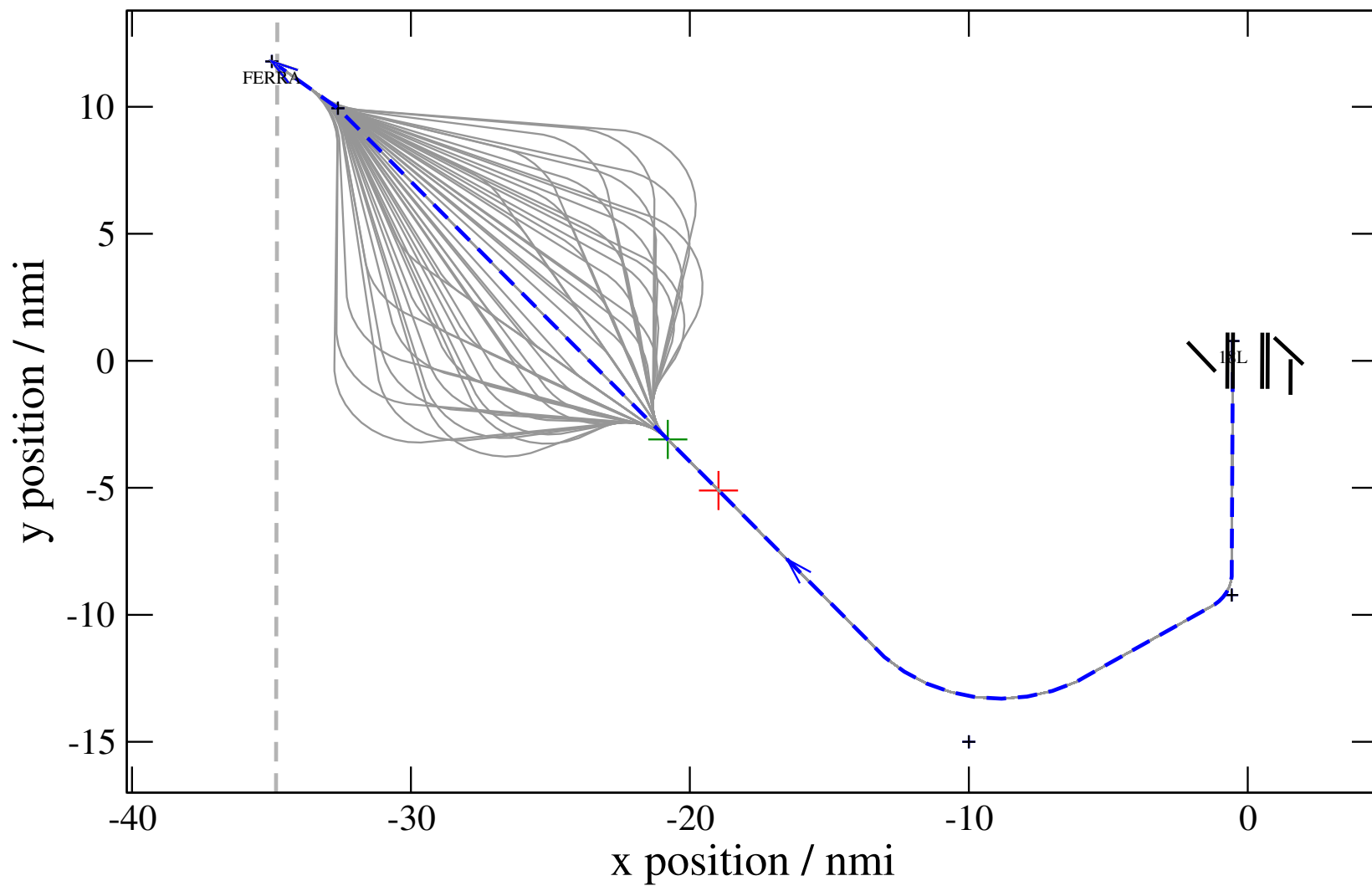
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 59 candidates



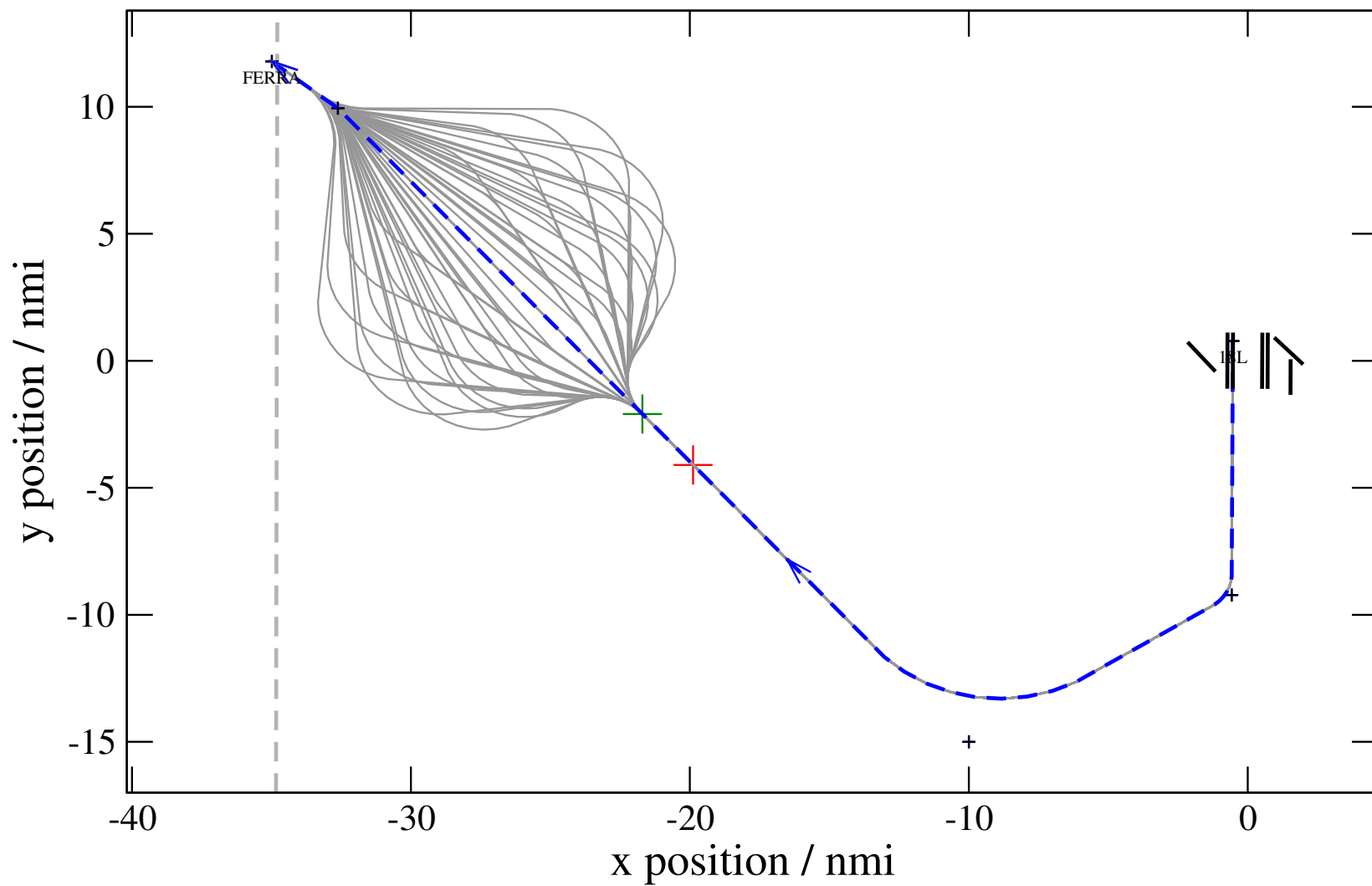
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 57 candidates



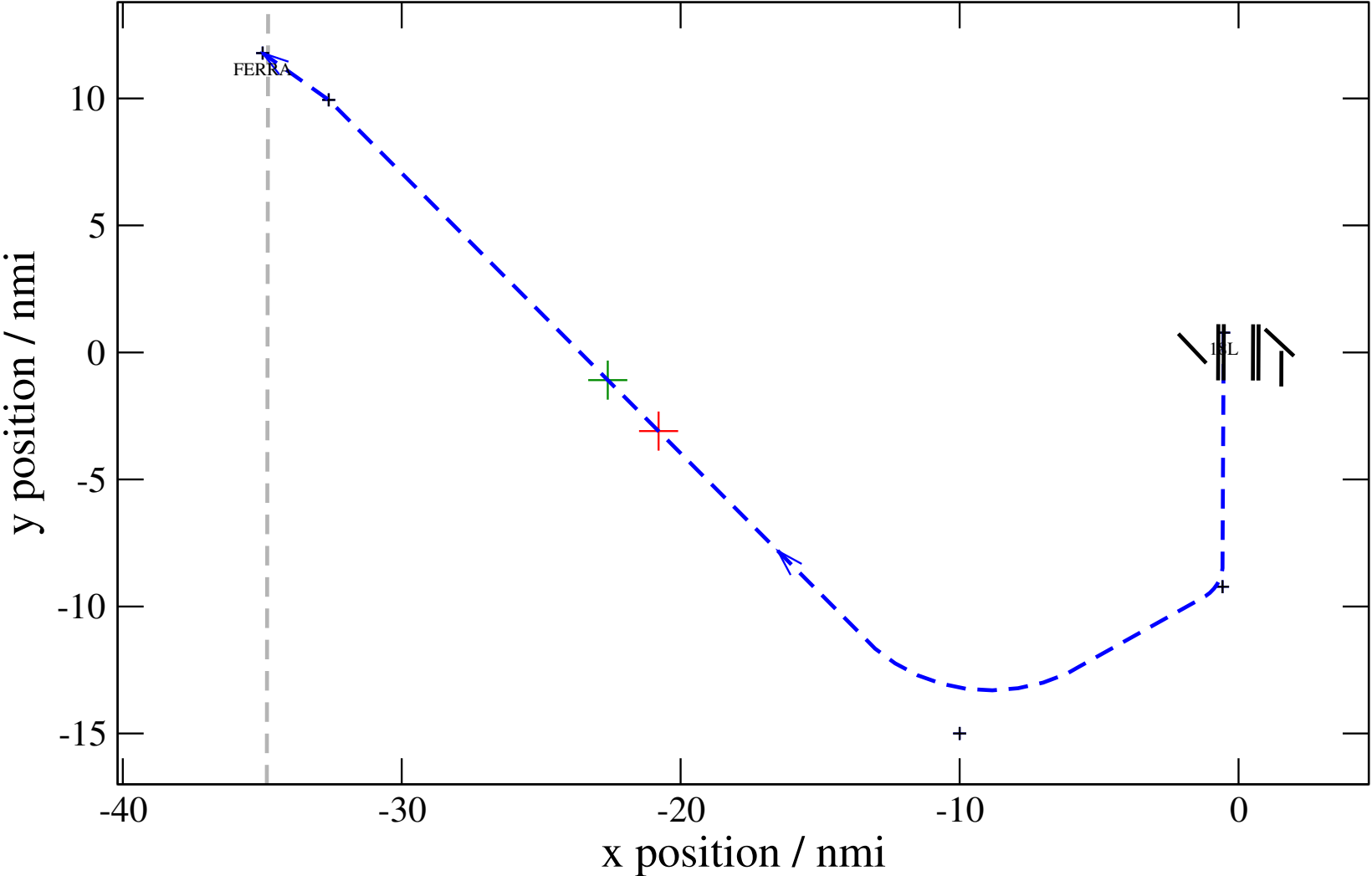
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 55 candidates



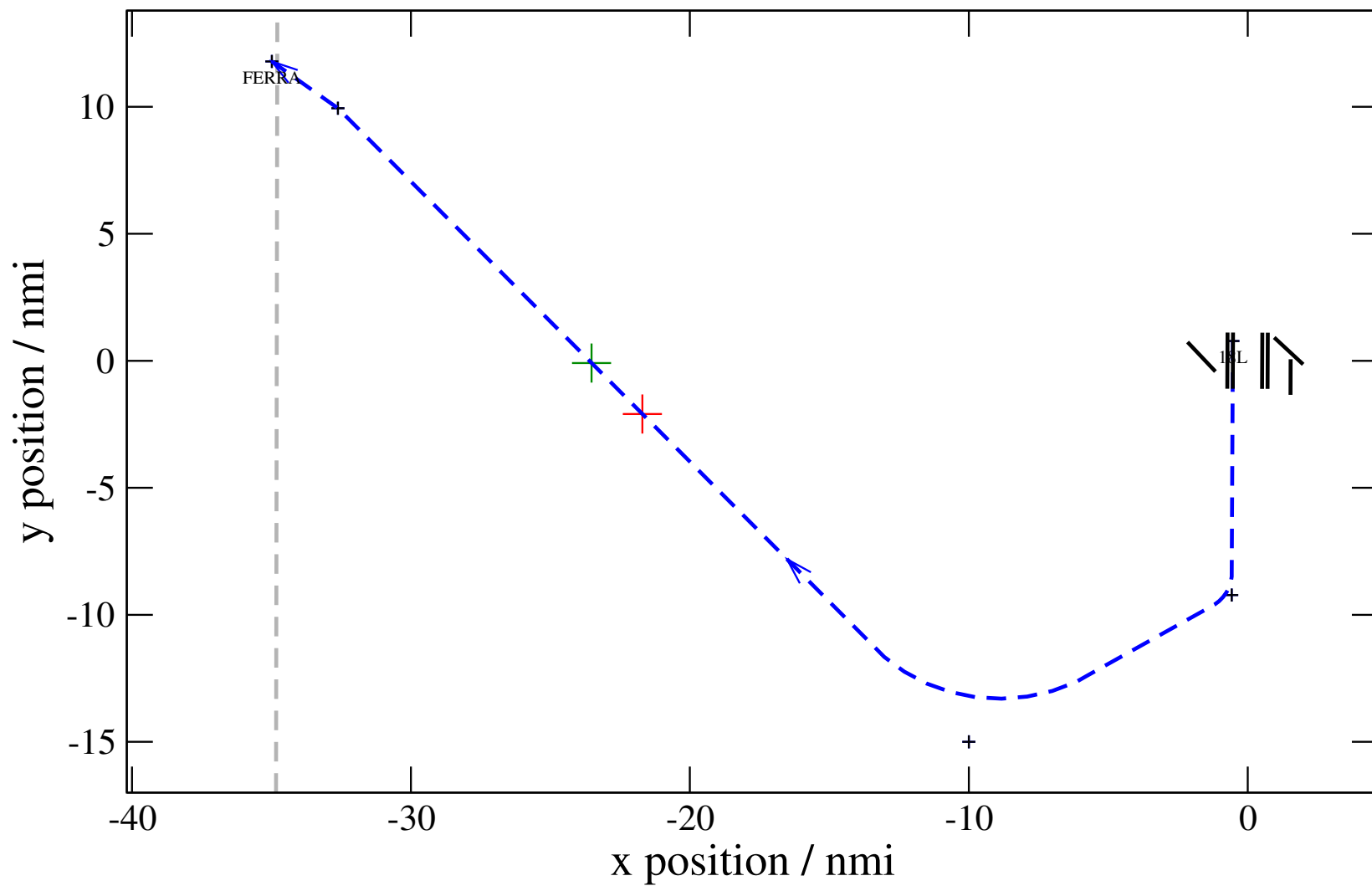
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



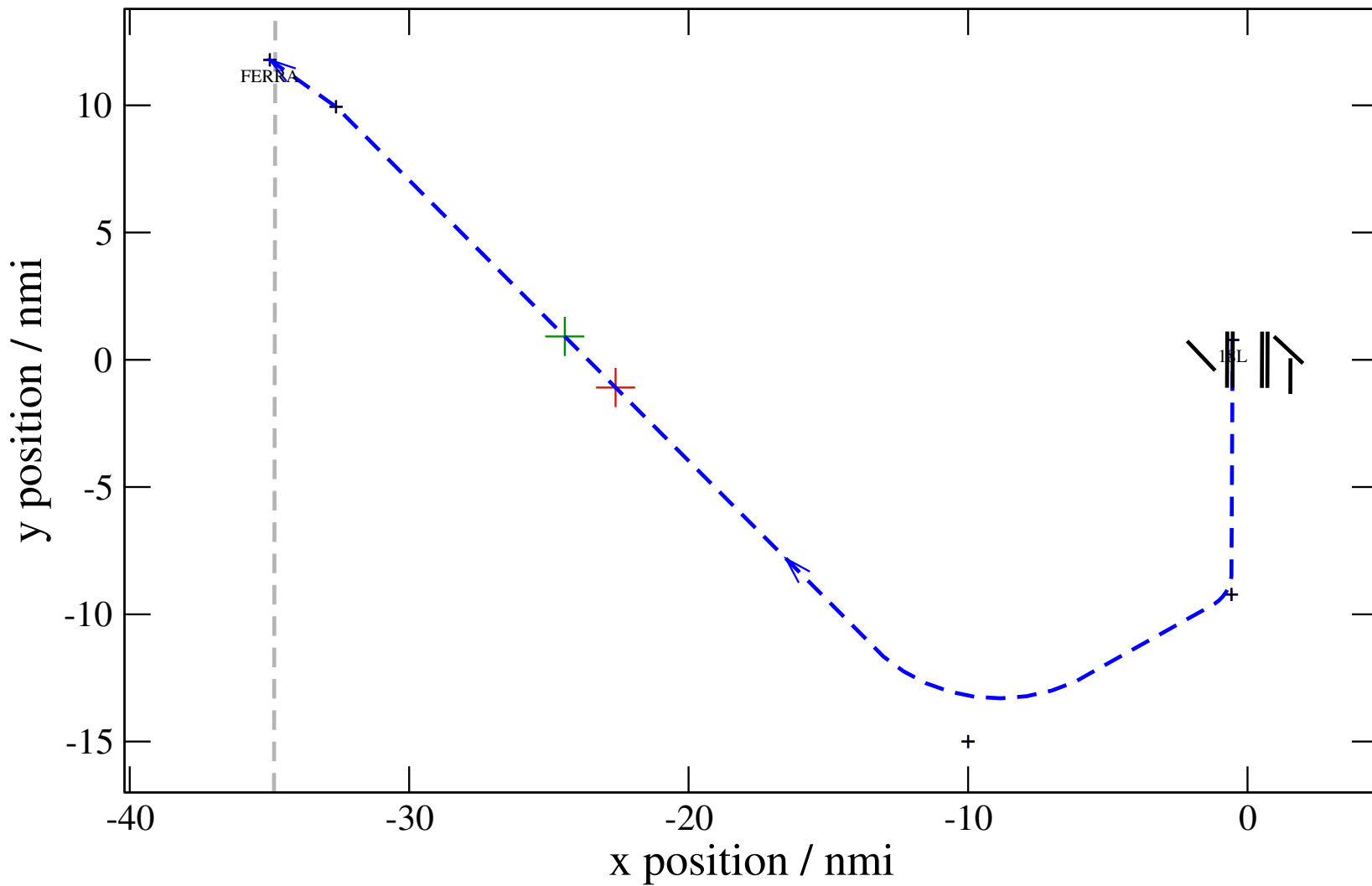
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



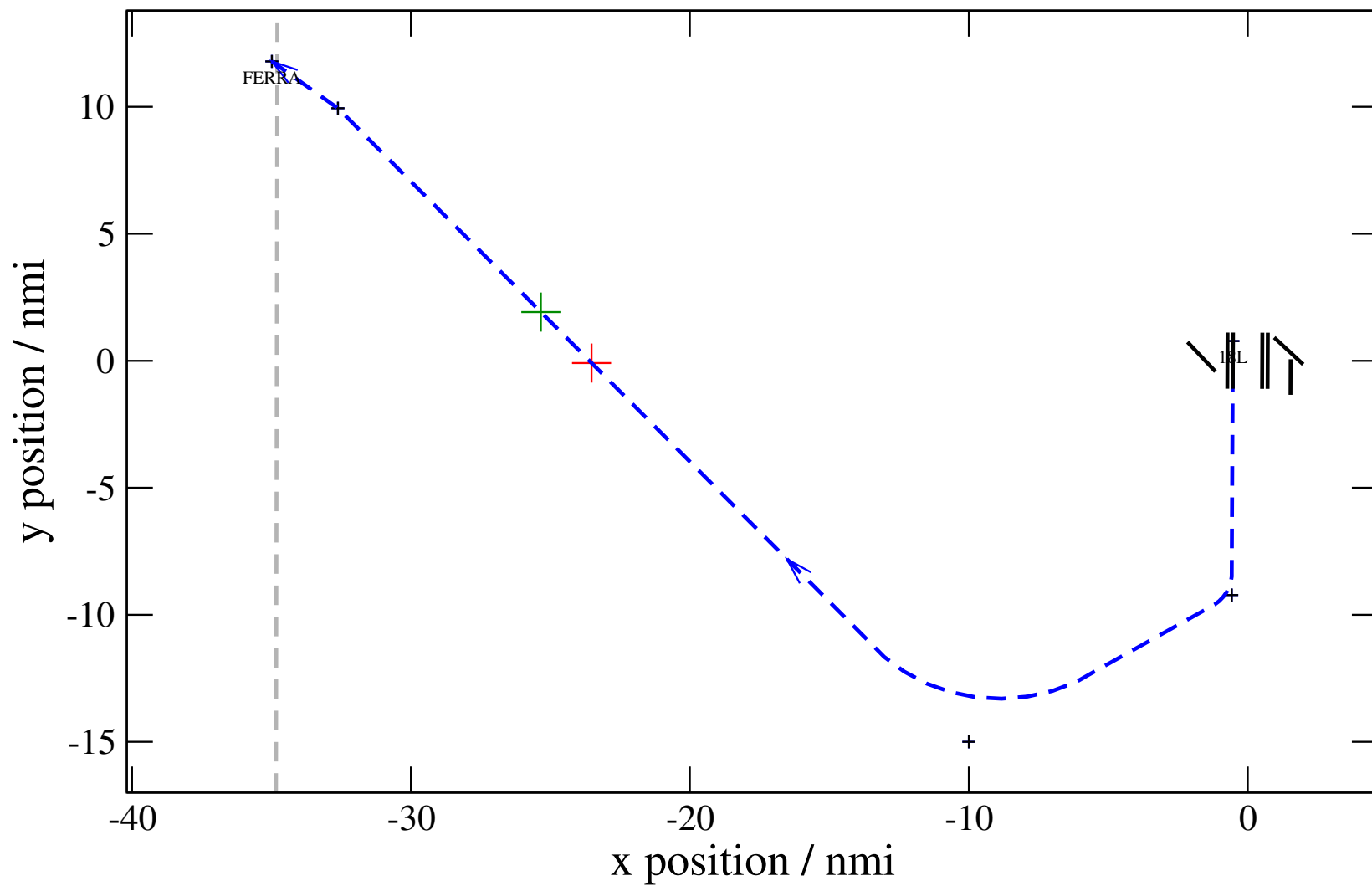
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



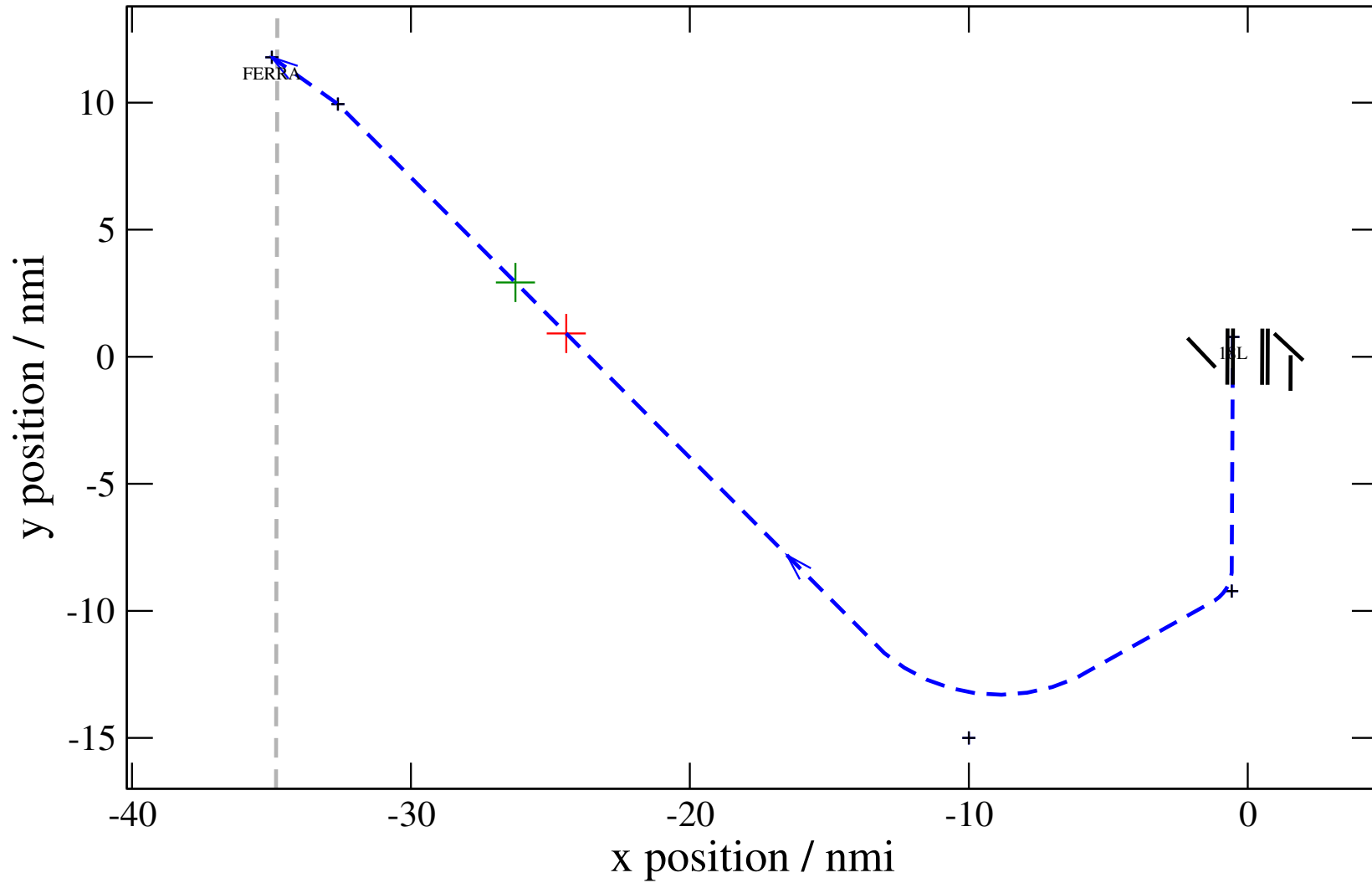
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



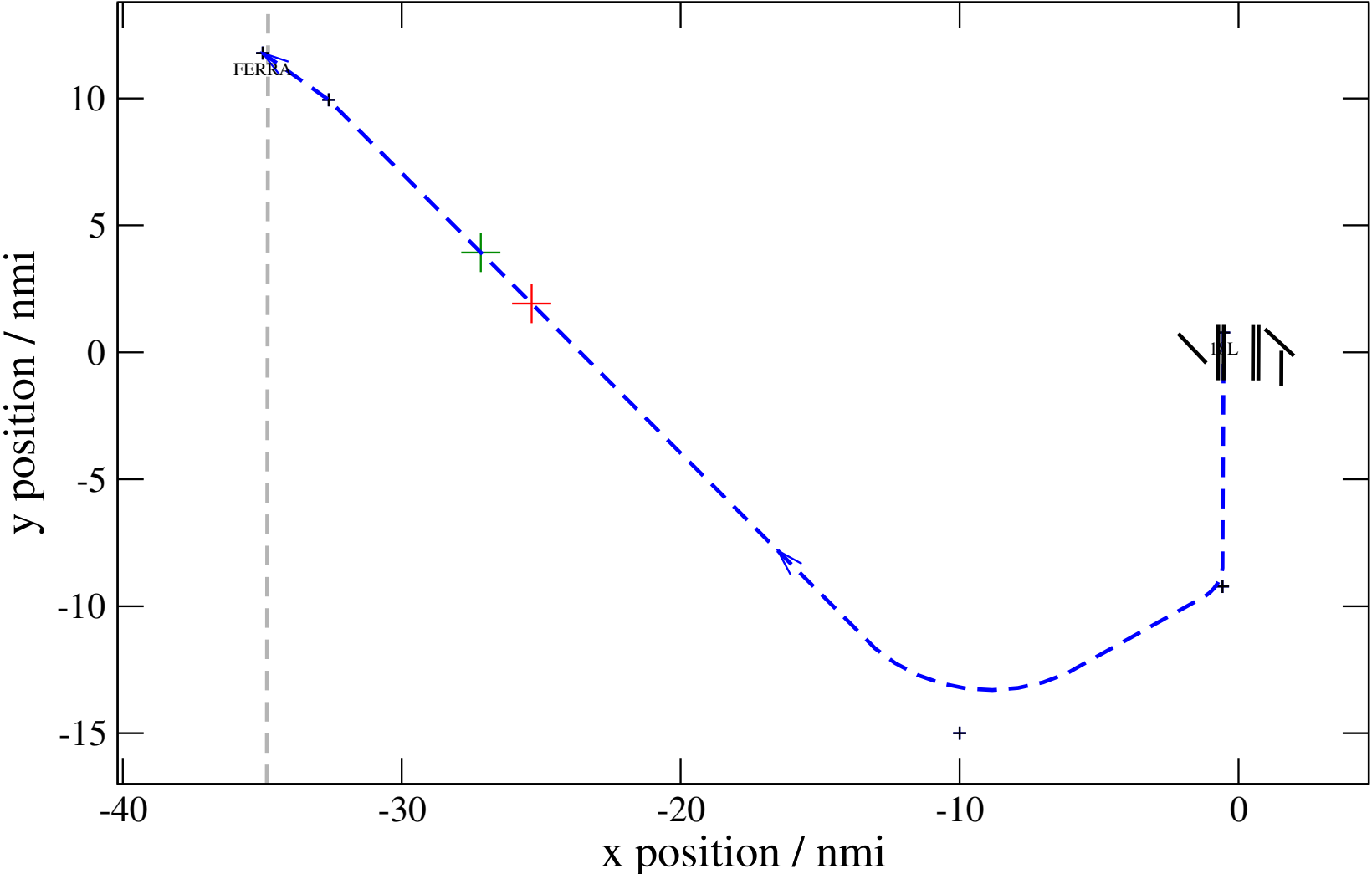
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



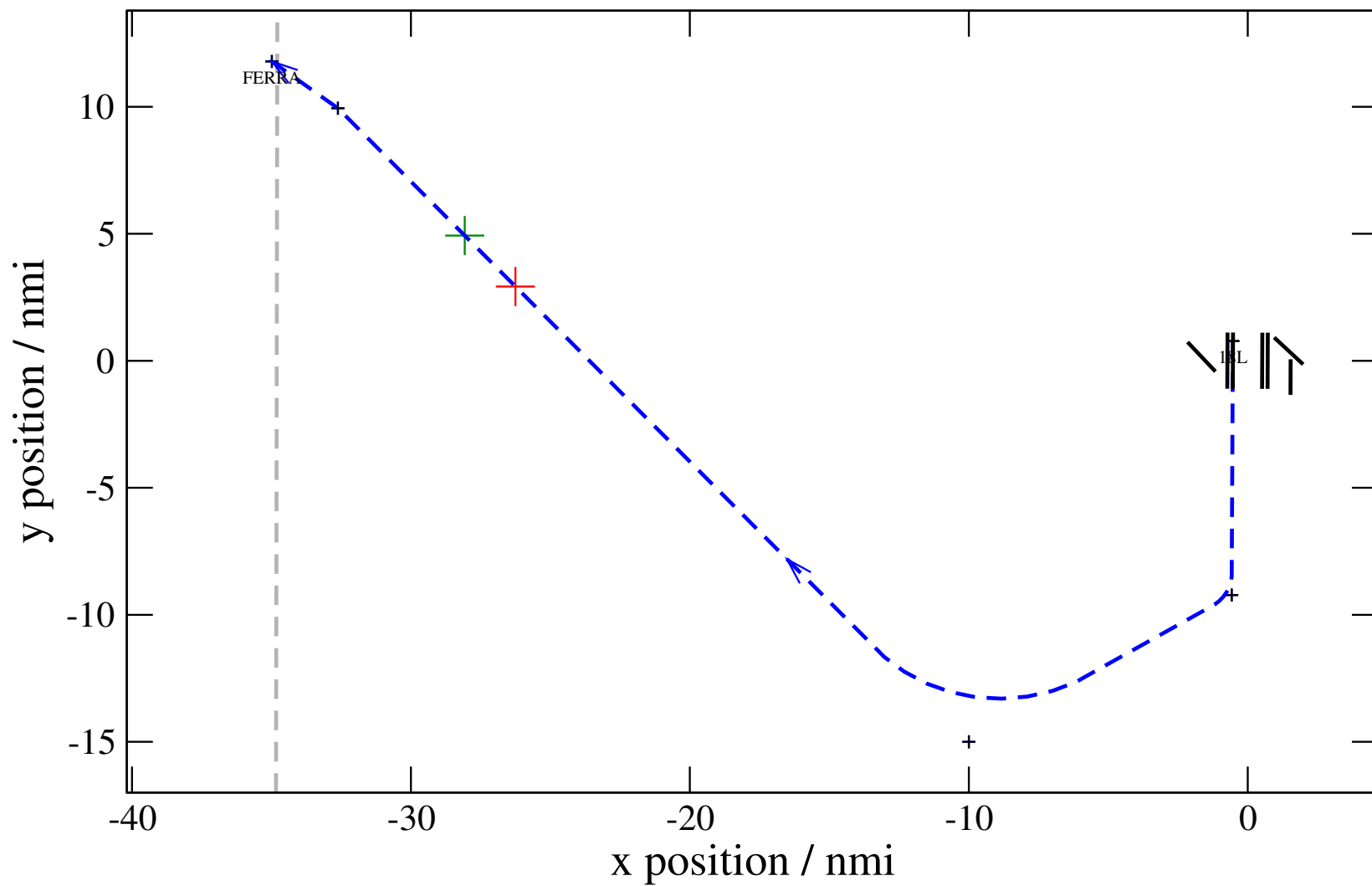
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



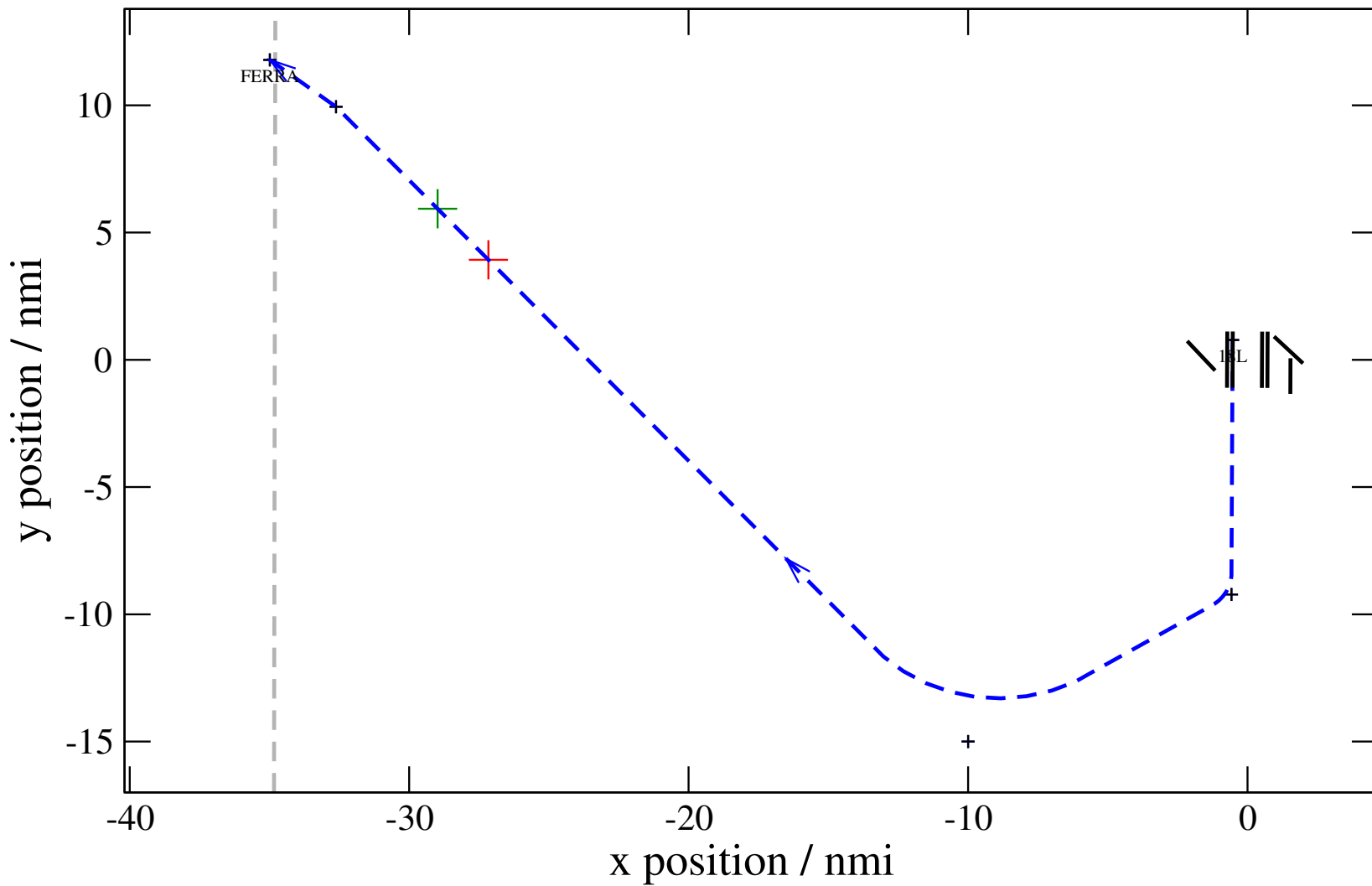
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



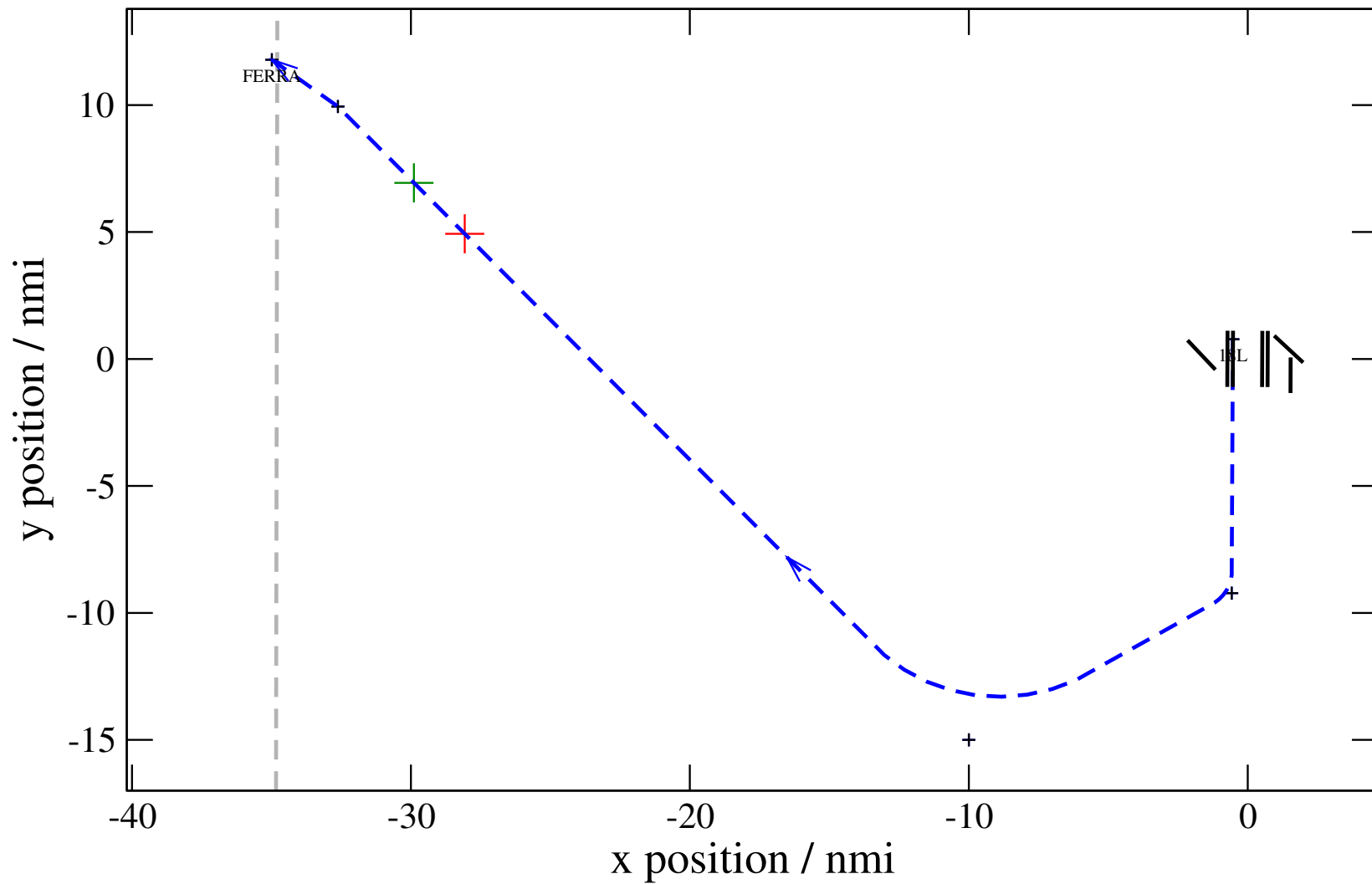
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



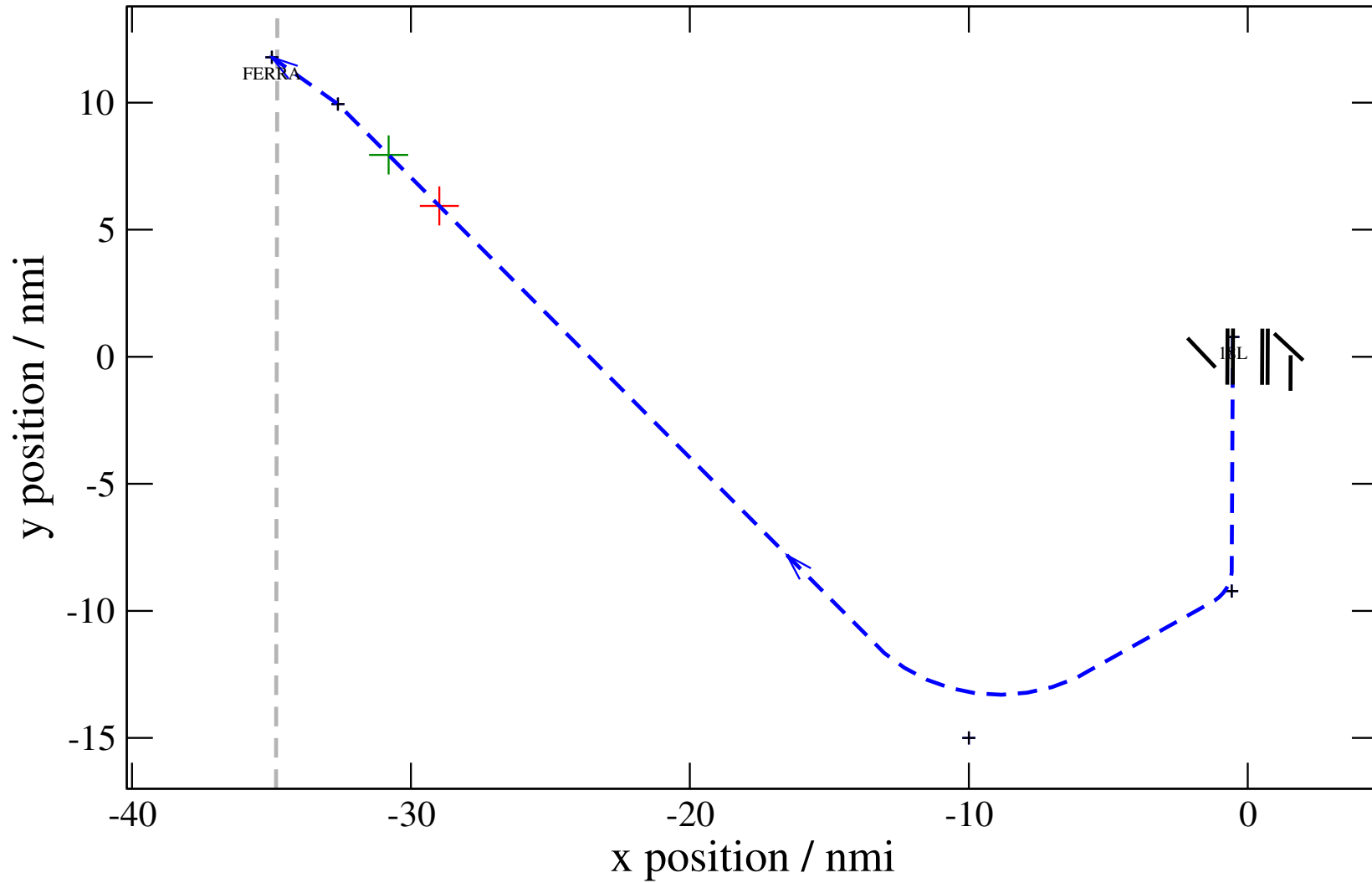
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



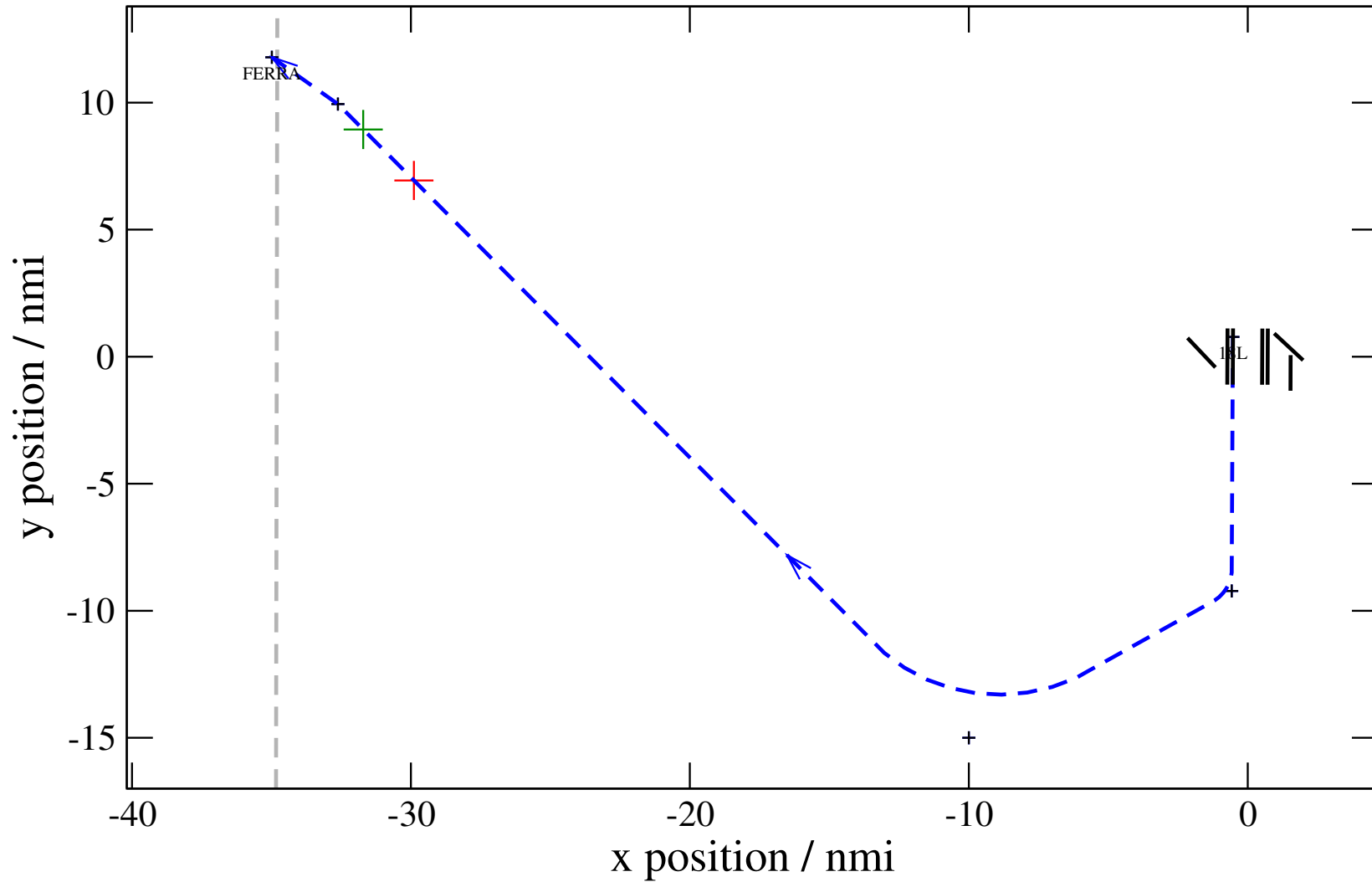
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



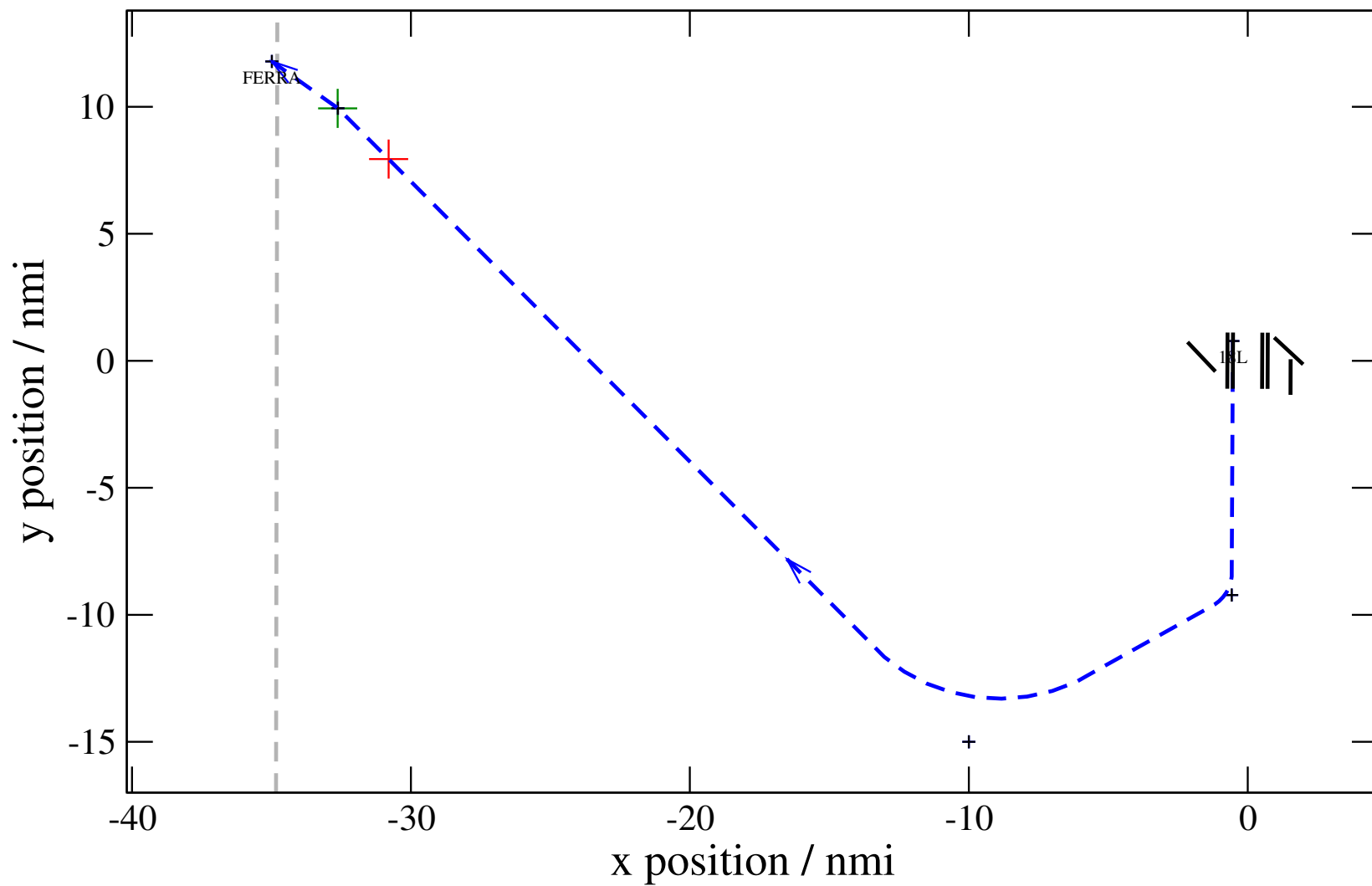
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



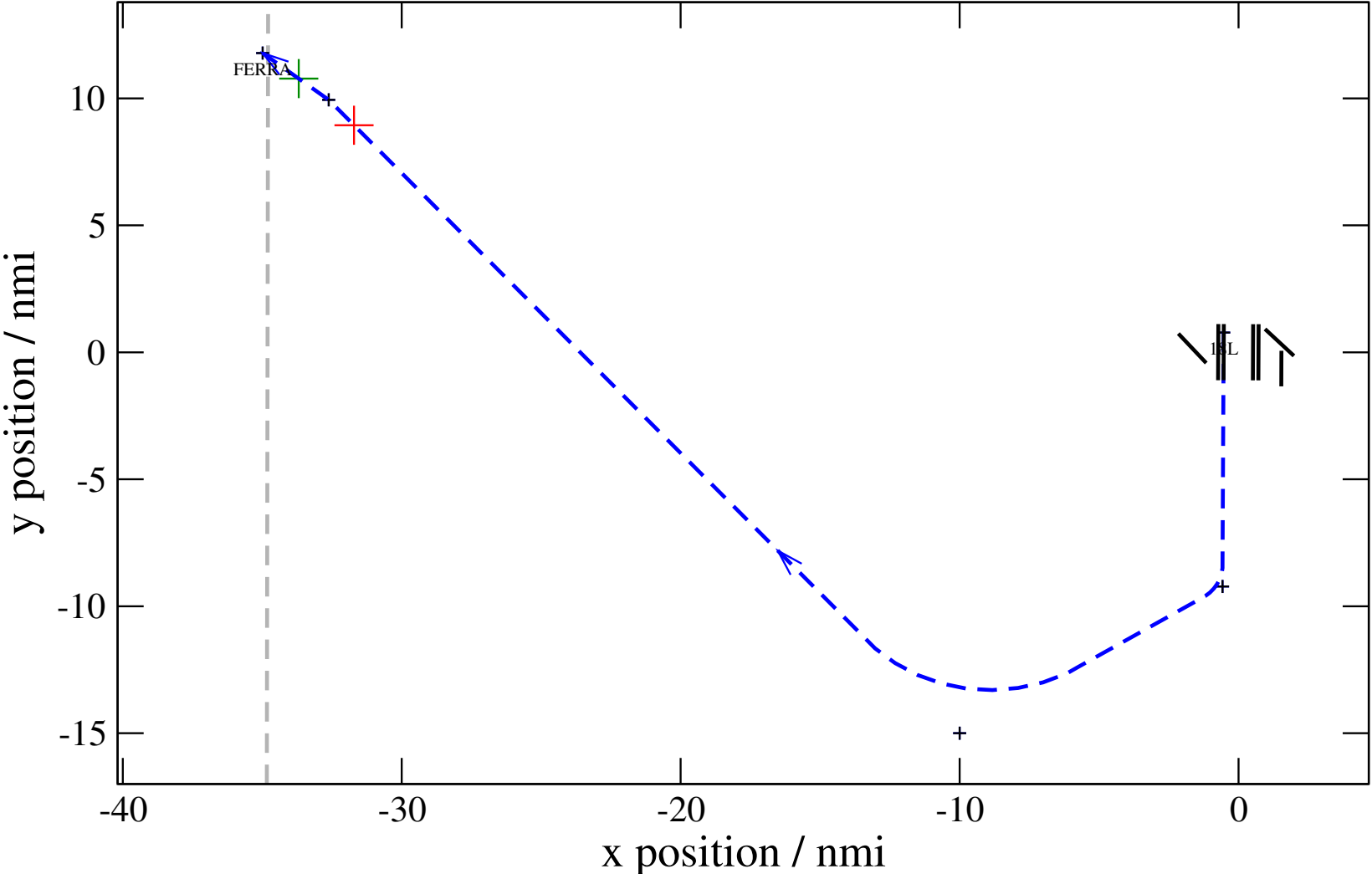
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



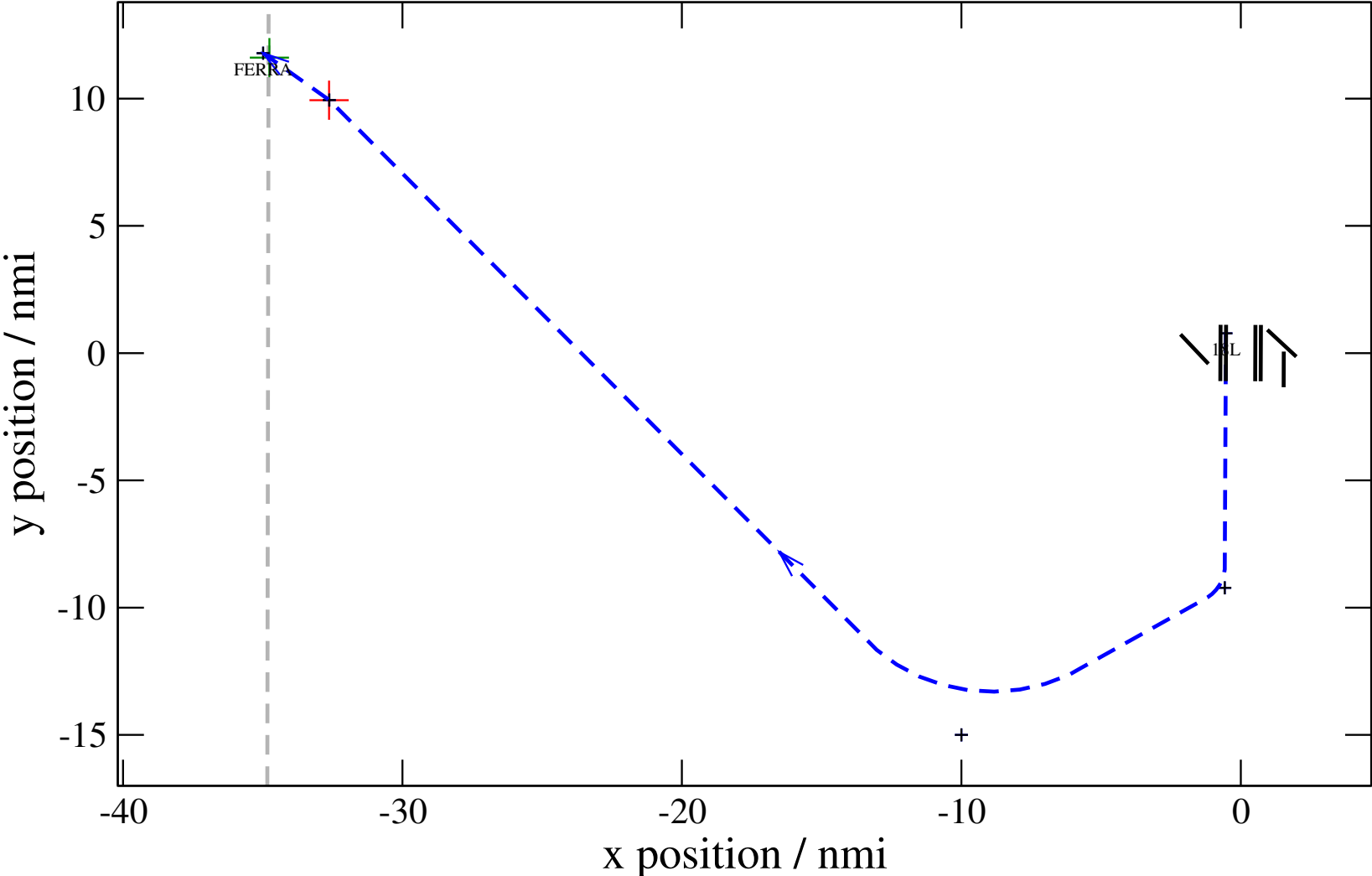
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



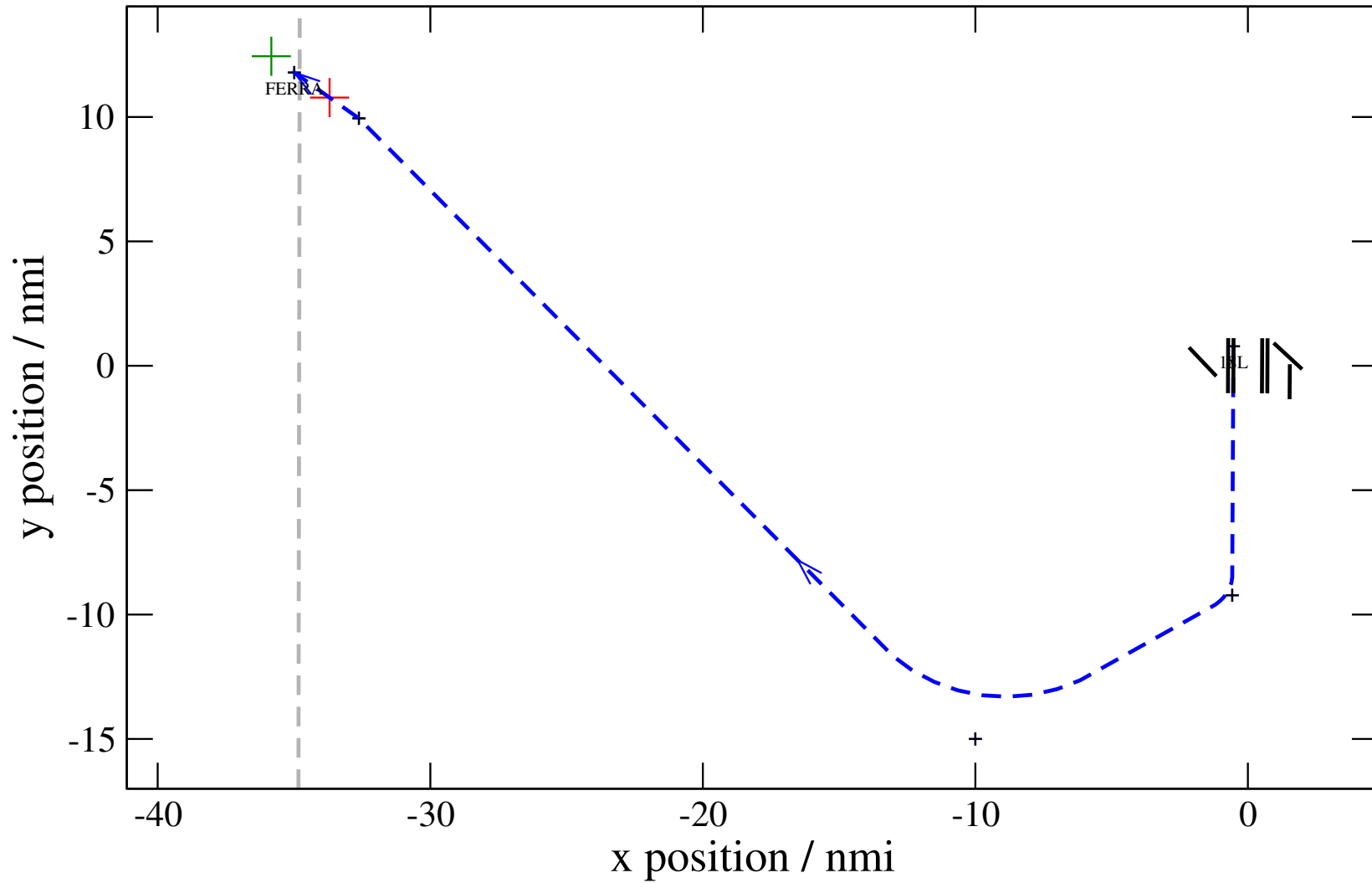
Departure Reroute Candidates After Takeoff

491 (BE99 F DFW/18L Dep) 0 candidates



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491 (BE99 F DFW/18L Dep) 0 candidates



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491 (BE99 F DFW/18L Dep) 0 candidates

