

Modified $Prove_{ISIS}$ of BLNS code

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Reordered internal pseudocode structure

Based on LaZer codebase, in particular on the structure of the functions `__lnp_tbox_compute_z34` (line 1221 of `lazer/src /lin-proofs.c`) and `lnp_quad_prove` (line 9 of `lazer/src /lnp-quad.c`). Here I list the line numbers of the ISIS prove taken from QUBIP pdf, which must be implemented in this order. The lines containing comments are the ones that need to be modified:

```
1. ... 6.
9.
22.
while ( $b_3 == 0$ ){
    12.
    13.
    14. Sampling  $y_3$  it's sufficient
    17.
    19.  $a_1 = (t_A, t_y)$ 
    20.
    21.
    23.
    24.
    25.
}
15.
18.
26.  $a_2 = (z_3, t_g)$ 
27. ... 33.
35. ... 40.
while ( $b_1 b_2 == 0$ ){
    14. You need to sample  $y_1, y_2$ 
    34.
    16.
    41.
    43.
    42.
    44.  $a_4 = (t, w, f_0)$ 
    45. ... 48.
}
 $a_5 = (z_1, z_2)$ 
 $\pi \leftarrow (a_1, a_2, a_3, a_4, a_5)$ 
```