In the uninterrupted part of my presentation I explained the core of our solution and presented one example for method 1. The solution is described in detail in the paper. In the next paragraphs the discussion continues at the point where I present one example of transaction between Alice and Bob (see the image below).

Fig. 1. The slide from which discussion starts. Example of a bit transmission between Alice and Bob for method 1.

OK, what happened in a different case? So in this case Bob will insert an error. Alice again sends the same bit, the white ball, which is a one, and Bob will insert an error this time. What would you expect to happen? Well, after the computation what you can see is that on the channel we get the black ball. What means that? From Alice’s perspective that means that she can detect that Bob has inserted an error because the output was different than the input. From Bob’s perspective, it’s not very clear what happened, because he inserted a black ball which means that he was inserting an error. Therefore he has no idea if Alice was inserting a white ball or a black ball, so this was the same if Alice was inserting a black ball as well.

Feng Hao: So is T forming some kind of boolean OR function?

Reply: You could think so, actually an AND function.

Jonathan Anderson: T could stand for transistor.
Reply: It could stand for whatever you want, actually I will show you an example of implementation later.

Jonathan Anderson: It is just a gate.

Reply: T is a box I would say, which performs this operation: if Bob inserts an error at the end you get an error and I will show two examples of how to implement this T box.

Bruce Christianson: But if Alice and Bob put the same thing in there, that’s what comes out? If they both put white in, white comes out?

Reply: Yes that’s right, if they put the same thing that’s what comes out.

Bruce Christianson: But you haven’t specified what happens on other cases.

Reply: In this case it was different input. Alice sent a white ball, representing a one, and Bob has inserted an error, i.e. a black ball.

Jonathan Anderson: T is a gate and Bob can say: send Alice’s result through or make it be zero.

Bruce Christianson: But it’s crucial that Bob doesn’t get any information if he inserts an error.

Reply: Exactly, so if Bob inserts an error the output is always an error; it’s always a black ball, regardless of Alice’s input.

Bruce Christianson: Oh, black means error does it?

Reply: Exactly.

Bruce Christianson: Black means error, white means correct.

Reply: Exactly, although from Alice’s perspective you can think as one or zero.

Bruce Christianson: So for the moment we assume that T can tell white from black?

Reply: Exactly, that’s correct.

Dongting Yu: In a given step, does the black ball that Alice sends represent the same thing as the black ball that Bob has sent in a previous step?

Reply: It could be, or it could different; it depends on your interpretation, as you wish. In this implementation is the same.

Dongting Yu: And also does Bob know that it’s actually sending an error?

Reply: Bob knows that he’s sending an error, yes. So if Bob decided to send an error is important that at the end he will see the same thing regardless of