Guest: Michio Kaku, Professor of Physics, City University of New York (a world-renowned theoretical physicist and climate change expert, and author of Physics of the Future)

Anchors: Charlie Rose, Gayle King

ROSE: Hurricane Sandy is restarting all over the debate about climate change and its effects on the weather. With us now is Professor Michio Kaku of City University of New York. He is a world-renowned theoretical physicist and a climate change expert. His book Physics of the Future was a New York Times Best Seller. Welcome, Professor. Good morning.

KAKU: Glad to be on.

ROSE: So here’s the question: Is there a connection between global warming and Hurricane Sandy?

KAKU: There is a connection, but there’s no smoking gun. You can’t say, “Aha, there is a direct link between Sandy and global warming.” However, the energy that the earth receives from the sun—the energy that drives Hurricane Sandy—is going to be increased by global warming. The waters of the Caribbean and the Gulf of Mexico, which is the energy source of hurricanes, is 5 degrees Fahrenheit (5°F) higher than normal in certain areas. And that’s the energy source driving global warming and driving hurricanes.

ROSE: So therefore, global warming is responsible for the increasing frequency of bad hurricanes but not necessarily for everyone.

KAKU: That’s right, on average. OK, also realize that sea levels have risen about a foot in a century, and that means that storm surges could become much more ferocious because of that fact. Now, global warming is a misnomer. It’s not really a uniform warming of the earth. It’s global swings, in other words, the “weather on steroids.” So think of 100-year forest fires, 100-year droughts, 100-year floods, 100-year hurricanes. That could be a new way of life in the future, because there’s more energy circulating in the atmosphere.

KING: You say, professor, that this is really so much bigger than a hurricane, than a storm. You think it’s much bigger than that.

KAKU: It’s bigger because it was caused by the collision of three large air masses. We had a normal hurricane that collided with the jet stream which normally goes maybe to Kansas. It went all the way down to Florida, and so the irregularity of cold air from the Arctic and warm air from the Caribbean area, hotter than normal. The collision of those two morphed into an animal that we have never seen before: this hybrid storm, which then became the “Hurricane from Hell.”
KING: It is a trend? Can we use the word trend?

KAKU: It could be a trend. In other words, the take away factor from this interview could be that we could be seeing a new way of life. We might have to get used to the fact that glaciers are receding, that the North polar region is shrinking and thinning, that summers are getting longer, that tropical diseases are spreading north, and that we could have more energized monster storms by the warming of the Caribbean and the Gulf.

ROSE: As you know, Mayor Bloomberg stepped forward and endorsed President Obama because he raised the question that the impact of Hurricane Sandy had put in stark and very clear of what the choices were coming up in this political campaign. Tell me what you think the political questions are about this.

KAKU: Well, whether you are for Romney or Obama, I think it should be on the national agenda. This is an issue that is of national importance. There could be other weird hurricanes waiting to happen, and we don’t need another monster hurricane.

ROSE: Can we prepare for them?

KAKU: Well, in the short term we can start to think about sea walls and other factors that the Europeans are already undergoing. The city of Venice, the city of London—many great European cities are already making certain kinds of short-term fixes. Long term, we have to think about renewable energy sources and perhaps driving down the costs.

ROSE: It is my impression—I do have this impression—you correct me or not, that you have changed your mind about global warming?

KAKU: That is right. I used to be a skeptic.

KING: That you were a skeptic—that surprises me.

KAKU: I used to say, come on, the earth is so big and we are so small, but then you look at the indicators, the fact that all the glaciers are receding. We have wacky weather. We have 100-year storms that are now the “new norm,” and we have to realize the trends are all in one direction. There is no trend in the other direction. All trends are in the direction of the heating of the earth, the energizing of the atmosphere, which provides the energy of hurricanes.

ROSE: And what percentage of respected scientists believe as you do now? What’s the percentage of scientific opinion about what you just said?

KAKU: I think it’s near unanimous. You really have to hunt very carefully for any kind of skeptic. Most of the skeptics just like myself have changed their opinion and now realize that it’s a real tangible effect. We are completing the dots, even though there’s no “aha!” moment where you can say this one storm is caused by global warming.