New Insight Into the Formation and Evolution of the East Reykjanesh Ridge Current and Irminger Current

T. Petit¹, H. Mercier², and V. Thierry¹

¹ IFREMER, Univ-Brest, CNRS, IRD, Laboratoire d’Océanographie Physique et Spatiale (LOPS), IUEM, F-29280, Plouzané, France, ² Univ-Brest, CNRS, IFREMER, IRD, Laboratoire d’Océanographie Physique et Spatiale (LOPS), IUEM, F-29280, Plouzané, France
Introduction

Large scale oceanic circulation

NAC: North-Atlantic Current
ERRC: East Reykjanes Ridge Current
IC: Irminger Current
Introduction

**Q.1** What is the large scale circulation, from the surface to the bottom, and the intensity of the flow around and across the Reykjanes Ridge?

**Q.2** How the ERRC and IC evolve along the ridge? How are they connected each other as well as with the circulation in the interior of the Iceland Basin and Irminger Sea?
Results

Hydrological sections were carried out by the RREX2015 cruise in June–July 2015 with Ship-ADCP (S-ADCP) and Lowered-ADCP (L-ADCP) velocity measurements.
Results

Hydrological sections were carried out by the RREX2015 cruise in June–July 2015 with Ship-ADCP (S-ADCP) and Lowered-ADCP (L-ADCP) velocity measurements.
Latitudinal evolution of the cross-ridge flow

Section along the top of the Reykjanes Ridge described by:
Conclusion

New vision of the circulation in the vicinity of the Reykjanes Ridge

- This new data set reveals undocumented along-stream evolutions of the ERRC and IC properties, structures, and transports.
- These evolutions are due to flows connecting the ERRC and IC branches at specific locations set by the bathymetry of the ridge and to continuous and significant connections with the interiors of the basins.